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THE

SOUTHERN PLANTER,

A MONTHLY PERIODICAL,

DEVOTED TO

AGRICULTURE, HORTICULTURE AND THE HOUSEHOLD ARTS.

VOLUME XII.

FRANK: G. RUFFIN, EDITOR.

RICHMOND:

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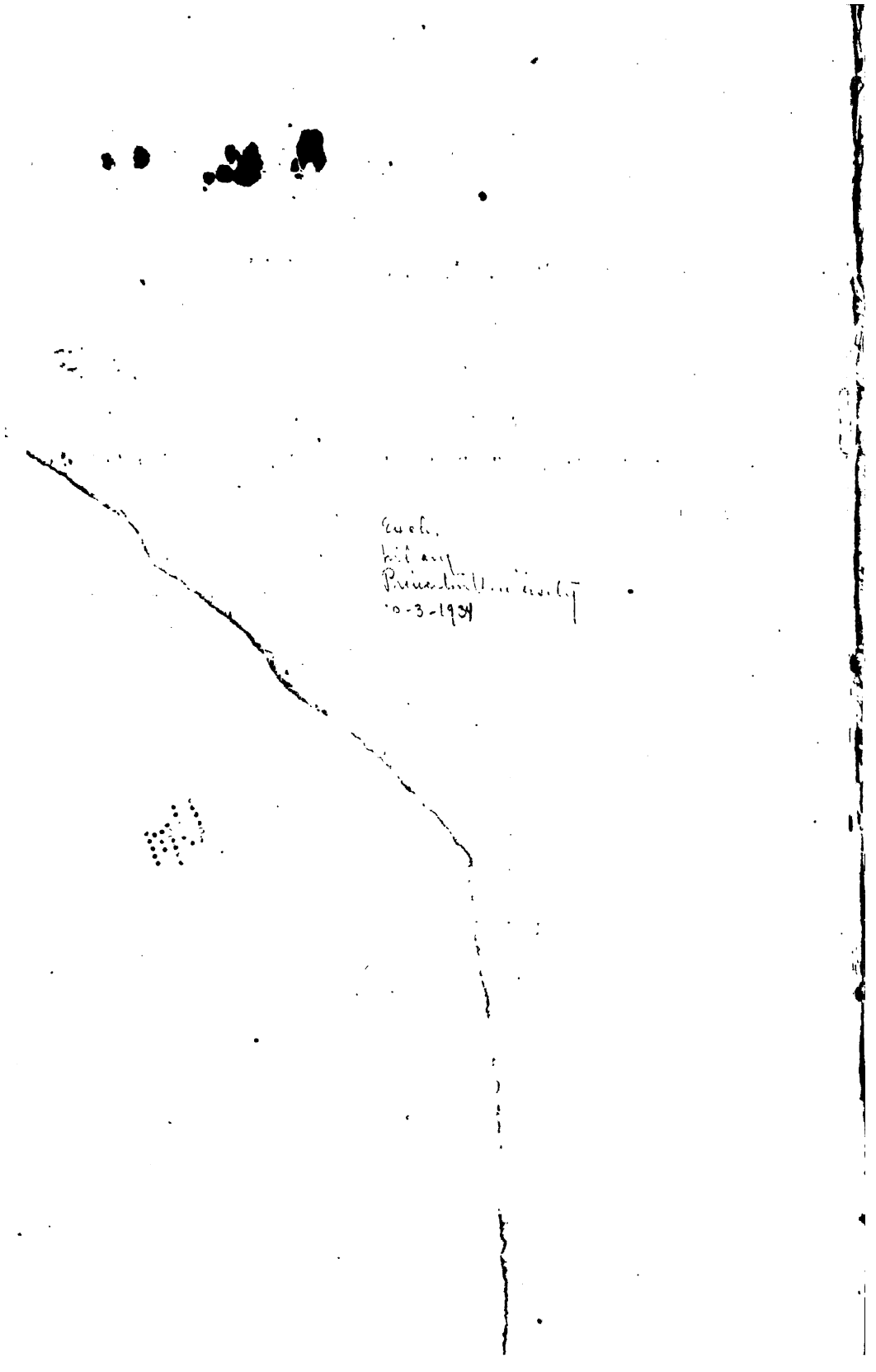

THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, EDITOR. P. D. BERNARD, PROPRIETOR.

VOL. XII. RICHMOND, JANUARY, 1852. No. 1.

For the Southern Planter.

TOBACCO.

Mr. Editor,—By an order of the Hole and Corner Club of Albemarle the undersigned were appointed to write an article for your paper upon "Tobacco—its Culture and Management from the Plant Bed to the Warehouse, with an Exposition of the Comparative Profits of this Crop and other Staples."

The object of the Club being to get a full account of the management of this crop in the hands of the senior member of this committee, it is impossible so to condense what is to be said as to bring it within the limits of a single newspaper article. At your suggestion, therefore, we divide it into several numbers, and begin with *the varieties of tobacco, plant beds, and the preparation of the soil for the crop.*

The varieties of tobacco are very numerous, a selection from which must depend upon the market proposed and the character of the soil upon which it is to be grown. On the rich lands within the range of the Club we cultivate no tobacco for manufacturing purposes, but only the heavier kinds, which are intended for foreign markets. The objects aimed at are early maturity, weight of plant, ease of culture and non-liability to accident. The varieties most in favor amongst us are *Ruffle, White Stem, Johnson, Shockoe*, and the *Priors*, (yellow and blue.) Of these we give a most decided preference to the Ruffle and White Stem—the former, perhaps, being the favorite of the two. The Ruffle is a rich, heavy tobacco, and owing to its peculiar growth (the leaves tucking up at the end,) can be primed *one leaf* lower than the White Stem, and is consequently, a *week earlier* in ripening; while, on the other hand, the ruffle upon the stem (from which the variety takes its name,) affording a place of concealment for the horn-worm, renders it more troublesome to worm than the other kinds. The White Stem is more liable to *fire* than the Ruffle, and the two being about equal in weight and quality of staple, it is difficult to choose between them. They are both easily injured by wind and in handling, as is the case, more or less, with all heavy tobacco, from brittleness of stem.

Of the *Johnson* we know personally but little. It is highly esteemed by many of our planters, particularly our friend and neighbor, Mr. Wm. W. Gilmer, whose opinions upon all subjects connected with this crop are worthy of high confidence. He claims for it weight, non-liability to serious injury from storm and handling, and a great length of leaf which makes it yield a large proportion of *strips*. He admits, however, the necessity of high priming to keep it out of the dirt. It bears so close a resemblance to the White Stem that it is supposed by many to be the same.

The *Shockoe* we believe to be nothing but the Yellow Prior, with a reputation acquired by falling into the hands of a good manager. We class it with the two Priors, which find no favor in our eyes. They are *light* and *trashy*, and have only their toughness to recommend them. They may suit other soils, but we consider it a waste of labor to cultivate them where the other varieties mentioned will grow.

Saving Seed.—We turn out a few of the earliest plants on rich land for seed, priming them at the usual time, and as the plant progresses trimming off the upper leaves and shoots, leaving three or four of the top branches for seed. From these we take off all late bloom and imperfect bowls, which, if left on, not only interfere with regular seeding, but cause the plants to "walloon" in the beds. Seed plants are cultivated and *suckered* as the rest of the crop, and after frost, must be cut and hung in a dry place, out of the reach of rats, until perfectly cured, when they are rubbed out, cleaned and bottled up for use.

Plant Beds.—Plants require a close, rich soil. In selecting land therefor care should be taken to guard against excessive wet or very dry seasons, by burning some dry and some moist beds. There is danger in depending upon swamp beds, as plants require but little moisture, while an excess of wet is fatal to them. If such locations are selected the land should be thoroughly drained the summer before the bed is burnt. The surest chance for plants is a rich mountain hollow with a southern or eastern exposure. The indications in this neighborhood of good plant land are alder and maple on low grounds, dogwood and hickory on high land. Where land is not sufficiently rich it is good policy to pen sheep upon it the summer before you propose to burn; and this may be done without injury to the flock by selecting the heat of the day in summer, at which time sheep do not graze.

WITHDRAWN

The best manures for plants are hen-house and chaff manure. This latter we make by littering our horse stalls with chaff and feeding on provender perfectly free from grass-seed. When it becomes saturated with the liquids of the stable we apply it as a top-dressing in the latter part of February, covering the beds, say one-fourth of an inch thick. Hen-house manure should be chopped in at the time of burning. Our experiments with *guano* on plants have not been very extensive or accurate; they, however, lead us to fear that this manure cannot be depended upon. Any other strong well rotted manure, free from grass-seed, may be used. Plant beds should be burned as soon after Christmas as the weather and condition of the land will admit. It is difficult to convey an idea of what amount of burning is necessary. If it be done in the month of January it is almost impossible, the land being in proper condition, to burn too hard. We have, however, known this to happen at a later period. So much depends upon the condition of the land and the character of wood used, that every planter must be his own judge as to the amount of burning necessary—of course it must be sufficient to destroy the grass-seed and roots which are near the surface of the bed. Our plan is to lay down skids of hickory or oak (green) about the size of a man's arm, and pile thereon a layer of wood about four feet wide, set fire and burn until the skids are consumed; then move the fires to the next section (taking care to leave no belts of unburned land between the sections,) and so proceed until the entire bed has been covered. We prefer this to the mode sometimes adopted of covering and burning the entire bed at one time, as we believe it can be done more regularly by moving the fires.

As soon as the bed cools off sufficiently to it up with grubbing hoes until the soil is reduced to a fine tilth, removing all roots, &c. taking care not to chop below the mould surface soil—then rake until you level the bed. If this be as early as January, sow half an even table-spoonful of seed to one yard square yards, mixing it with plaster, or sand to facilitate evenness of sowing, and in with the foot. Then about the February sow another half spoonful, and in as before: or if it be as late as of February sow the whole spoonful When the bed is sown as directed, be covered with fine, straight brush, on as to protect against frost while it some sunshine to strike the bed. This may be left on dry beds until the plants large as a dollar, and upon wet ones they are half that size. If it be necessary force plants, plaster may be used. Of it is indispensable that the bed should used of grass, weeds, &c. whenever appear. It is good policy to edge plant with mustard as a protection against fly. know of no other remedy, and this is only partial. Never burn two successive years in the same neighborhood, as the fly deposited about the old bed is almost sure to destroy the new one. It is well to destroy, by burning, all the foul growth around the bed, as this is often a harbor for fly during the winter. It is, perhaps, hardly necessary to say that ditches should be opened around plant beds to prevent any flow of water over them.

Preparation of Soil.—The land selected for tobacco should depend somewhat upon the prospective price of the article. If we have reason to suppose it will command a high price, we pitch the crop upon our best lands, and either increase the number of hills, or at any rate, by applying the manure to rich land, increase the weight of the plants. But if we apprehend low prices we put it on poor land, and find the enrichment of the land no inconsiderable part of the profits on the crop. But of this we will have more to say hereafter. We like to break up tobacco land early, particularly red land, so as to let it be thoroughly pulverized by the action of the winter's frost. If possible, we would like to do this when the weather is just above the freezing point, in order to destroy the insect deposit in the soil, and with the same end in view, to harrow in the cold weather of February. We plough with a three-horse plough followed by a subsoil coulter. During March, April and May, haul out and scatter the manure intended for the crop—sow one bushel plaster per acre, and plough in with a one or two-horse plough.—Such red land as has no sand in it, after the first ploughing, should not be ploughed the second time, except with a coulter or shovel, so as to break it to the proper depth, without turning under the pulverized soil on the surface. For this purpose a coulter is to be preferred. When the land is properly reduced by harrowing, lay off with a shovel plough three feet four inches each way, and throw up a large hill. This hilling should, if possible, be done early, while there is season in the land, so as to be ready to receive the plant when the time for planting arrives.

This brings us to the end of the subject embraced in our first division, which we beg leave, with an apology for the imperfect manner in which it is gotten up, respectfully to submit.

Your friends,

WILLIAM GARTH,
R. W. N. NOLAND.

Ivy Creek, Albemarle.

PRESERVING WILD FOWL.—Remove the intestines carefully, and wipe out all the blood with an old soft towel, until the flesh is quite dry; then dust flour over the inside, and scatter two or three drops of creosote upon a piece of blotting paper, and put that in and tie the bird up tight in another piece of similar paper, upon which put a few drops more creosote; then

hang up each carcass separate, in a cool, dry place, and it will keep sweet for a long time. Never remove the feathers from a bird you wish to preserve.—*Germantown Telegraph.*

For the Southern Planter.

HOLLOW HORN IN CATTLE.

Mr. Editor,—Confined to the house by a bad cold, I am forcibly reminded of the promise I made to furnish you my notions of *hollow horn* in cattle.

It might have been better to consult Youatt, or Skinner, if either of them has written on the subject, but I failed to find their books, and I must leave it to you to judge whether I have only repeated what they teach, or have misapprehended what I profess to have observed, when my speculations come to be compared with those masters. I enumerate the facts of one case, as recorded at the time.

1839, Aug. 6. Lost a very fine cow of what was said to be hollow horn.

Had a calf seven weeks before, while very fat; gave great quantity of milk; was observed after a few days to be *feverish*, indicated by hair turned back, looking rough, low of appetite, and speedy *loss of cud.* Held *head straight out*, tossing it up and down and from one side to the other, a symptom which increased in time, though it occurred quite early in the case. More or less discharge from the nose, at first of only mucus; in process of time it was pus. Had sore bag, and very much distended, so that I thought the symptoms were due to milk abscess, or inflammation of bag.

The cow doctors consulted, laid it upon loss of cud, and at first were confident of restoring the cud and so curing the cow. All the remedies were resorted to: drenched with vinegar and salt; ball of corn meal with pepper, salt and vinegar; balls of raw beef, whole herrings thrust down the throat. *Frogs* were alone omitted, of all the remedies we knew. Coincidently I had the horns bored, and one sawed off. Nothing issued but a fluid like white of egg and some flakes of pus. The former I took to be incipient pus or coagulable lymph. Seemed to suffer much pain somewhere, but could not tell where. Gradually became excessively poor, and died in about five weeks from attack.

After death examined head. *Crest* between horns perfectly hollow; all the little divisions and offshoots of bone which usually are found in the cavity, were removed in greater or less degree, and there were only the white-of-egg-looking matter and pus. The horns also entirely hollow, one of them filled with nearly a pint of the lymphy and purulent matter. The cavity extended to the orbit of eye, thence communicating with the nostrils, especially on *one* side. The brain, which lies in very near contact with this cavity of the crest, (which we had as well call the "*frontal sinus,*") was softened and fallen, in one hemisphere, into a thick mush; a small part only of this half was of healthy consistency, preserving its form or vessels entire. The other half (hemisphere) was not softened, but the vessels were very full of blood and the membranes exhibited signs of intense inflammation. No other region or organs examined.

Remark.—Some persons have supposed hollow horn to be a matter of fancy, and not really to exist. This case, as far as it goes, refutes the idea.

Hollow horn usually occurs in cattle while very poor, in the winter or in early spring, when just coming out of winter quarters.—This case shows it occurring in the summer, and in a very fat cow.

The cow *lost her cud.* A very rude notion holds as to this fact. It is no more, I presume, than such an impairment of the health of the digestive function, as deprives the cow of the power to throw up from the stomach the food which requires a *chewing over* prior to its being sent on upon its route through the intestines. It may, therefore, arise from any disease which affects the appetite and digestion. If the cause happen to reside in the stomach itself, or in the nervous influences controlling the *regurgitating* faculty, the stimulant *boluses* would seem somewhat calculated to restore the power. Why a herring or a frog alone can do it, is absolutely unintelligible, and as I have never *seen* the "cud restored" by any of these means, though I have witnessed their use very often, I withhold, as yet, a belief in their efficacy.

The crest in the cow answers to the *frontal sinus* in the human, and its diseases probably resemble those of that cavity. A bad cold affects the lining membrane of the nose, or it may at once reach that of the frontal sinus, immediately connected with the nasal passages, producing, there, inflammation which may result in various degrees of mischief, from simple pain, to be relieved by remedies, to suppuration and death.

We may suppose that the disease is contracted in bad weather, and most often when the body is debilitated. "*Cold,*" as it is called, is taken, and, as in men, symptoms of catarrh arise; running from the nostrils, and sometimes even cough; then signs of a local inflammation about the head, tossing it, holding it straight out, first one side, then the other, loss of appetite, loss of cud, or, as it really is, *severe indigestion, with loss of regurgitating faculty.* After a while pus is found to flow with the mucus from the nostrils; or, if the horns are bored, pus and coagulable lymph issue. Various washes being injected into the horn, and thence into the contiguous cavity where the inflammation started, cause the fluid pus to be discharged, and may, at a certain stage of progress, help the diseased membrane to regain health.

As the inflammation of the sinus advances, the brain, by contiguous sympathy, becomes

involved, and then, probably, death seldom fails to ensue.

Cows certainly recover after pus has been discharged from the horn and nose. In such case the inflammation may not have reached the brain, and simply conducting the matter off, gives the usual impulse to the membrane of the cavity to heal. The brain does not necessarily take on disease, though it is in such near vicinity to the seat of the inflammation. When it does, I suppose it is usually mortal.

Dry hollow horn is spoken of. I know nothing of its phenomena. Is it so called when, on boring the horn, no fluid issues, or when the horn, on being sawed off, is found *hollow*, yet holding no fluid?

Treatment.—This I predicate more upon general principles than upon experience. It will seem proper, if the explanation of its nature and seat be correct, to bleed freely, (best from the nostrils) unless the cow's low condition forbid.

Then purge with Glauber salts, one or two pounds at a dose. Bore the horns with one-quarter inch gimlet, in such dependent point that the contents will flow out. Bore it close to the head (one and a half or two inches off,) so that, although when you do it, only blood may flow, the aperture will be ready to discharge the pus when it is formed. If the flow *seems not to be free enough*, the horn may be sawed off. I know no other reason for doing this.

Apply a large poultice of *mullein leaves* boiled and mashed up with bran, just over the crest, wrapping the whole top of the head. Change it three times a day, or oftener, having first sheared the hair close.

To Restore the Cud.—Boluses of one-half pint corn meal dough and an even table-spoonful cayenne pepper, thrust down the throat two or three times a day. Or one-half pound raw beef balled up with salt and pepper, to make it hot. Herrings, frogs, &c. are advised; those who will, can *try* them.

A drench of red-oak bark tea and wild cherry bark tea, and red pepper tea may do good; but doubtless the safest reliance will be upon trying to cure the disease of the head. The cud will come when health is restored.

CHS. MINOR.

Charlottesville, Nov. 19, 1851.

For the Southern Planter.

FARMING IN SURRY.

Mr. Editor,—In the October number of the Southern Planter there is a communication from the Hon. W. Newton on the Improvement of Worn Out Lands in Virginia by Guano and Lime, which seems to have attracted general attention. Mr. Newton informs us that the first crop of wheat sowed was a total failure, not worth threshing, and was used as litter for stables, but the seventh and last crop, by the application of lime and guano, yielded over twenty bushels of wheat for one throughout the entire crop. This was certainly doing very well, and we are much indebted to Mr. Newton for his handsome communication setting forth the facts, as it will have a tendency to stimulate us to renewed exertions in improving our farms. My purpose now is to tell you, Mr. Editor, in as concise a manner as possible, what was done the last season in this county in raising wheat. But I confess I can't give altogether such cheering news as Mr. Newton has done, because, perhaps, we are not only less skilful as cultivators of the soil, but also less generous in the application of manures. Yet we are not entirely idle, and you will see that as we are on the right track, a little more perseverance and industry will enable us to almost equal Mr. Newton.

Two of my neighbors, Mr. W. Ruffin and Mr. J. W. Watkins, made this year, the former twelve bushels of wheat for one and the latter fourteen for one through their entire crops. These farms before they were marled would hardly have made more than three, certainly not more than four for one, and the above gratifying result was achieved almost solely by the agency of marl (fossil shells,) for no guano or other bought manure was used at all on either farm. Mr. Watkins cultivates his farm on the three shift, strictly non-grazing system. Mr. R. is just throwing his farm into five fields—grazes moderately. This is much the better wheat farm of the two.

Now, if our farms will yield twelve and fourteen bushels for one under the three shift system, what may we not expect when we have more enlarged views of agriculture adopt a more enlightened and scientific system of cultivation, namely, the five or six field rotation with all the advantages and benefits of clover and pea fallows?

—— J....

Surry, Nov. 15, 1851.

For the Southern Planter.

REPORT ON EPES' ISLAND;

A FARM ON THE LOWER JAMES RIVER, IN CHARLES CITY COUNTY, OPPOSITE THE MOUTH OF THE APPOMATTOX.

To the Hole and Corner Club, No. 1,
Prince George County:

The committee appointed to report on this farm, take great pleasure in performing the duty assigned them.

The Island is an alluvial formation, of course ancient in its character—being high and requiring little labor to drain it. Originally very fertile, it had shared the fate of all other lands before the spirit of improvement had dawned upon Virginia's sons. So low had this fine

estate become, that a few years ago, with a large force, scarcely enough corn was made to feed the laborers and teams engaged in tilling the farm, and a few hundred bushels of wheat for sale, were all which could be made under the management then prevailing. Now, under an improving system, with comparatively few hands, luxuriant crops of corn and wheat are made, and the fields present an unvaried appearance, teeming with vegetable life. Before improvement had taken place galls were seen on every knoll on the farm, level as it is. Now there are no naked places to mark the effects of the spoiler's hand; galls have been healed and nothing offensive is seen to mar the beauty of the aspect as the eye wanders over the landscape.

The Island contains about four hundred acres of arable land. Mulatto soil, sufficiently stiff, but clay preponderating; subsoil of the same character, differing only in being stiffer. The farm is laid off in five fields of eighty acres each, with a road from the landing, running north and south, dividing the fields and parts of each shift, the division of fields being east and west; thus the crops are all convenient to the road, which passes through the farm-lot on which stand the buildings receiving the produce made on the farm.

There has been commenced a hedge of Osage orange to divide two adjacent fields, and now in the second year of its growth. So far this hedge is looking well, and it is intended to continue the planting of hedges, should the present experiment succeed, around each field until all the fields are protected by a live fence.

Rotation of Crops.—First year, corn; second year, wheat; third, clover; fourth, clover, fallowed for fifth, wheat; to be followed by corn at the beginning of a second series of crops.

The preparation and cultivation of the corn crop do not materially differ from the practice prevailing on most farms which are judiciously managed. The difference consists in fallowing the land intended for corn with a four-horse plough, and using double ploughs in the cultivation of the crop. The fifteen feet beds farmed for the previous wheat crop, with a plough drawn by four mules, are reversed with a plough of the same size; the land is harrowed at the proper time, and laid off in rows five feet apart. Planting is commenced by the 25th of March—sometimes earlier, but not later than the 10th of April. The seed is dropped at intervals of twelve to fifteen inches in the step, one stalk being left in the hill when thinned out. The earth is thrown from the plants with a two-horse mouldboard plough, the bar running next to the corn, and two furrows to the row. The hoes follow the first ploughing, cleansing the step of grass and weeds.

Immediately after the first ploughing is completed the mouldboard ploughs are again used throwing the earth to the corn and breaking up the entire row. Sometimes the double-shovel plough is used previous to the second ploughing, running in the furrows made by the plough during the first working, and intended to loosen the earth around and below the roots of the young plants. After these several ploughings are finished, harrows or cultivators are used to level down the beds, and hoes again follow to complete the operation and destroy any grass or weeds left by the ploughs or cultivators. This seems, judging from the clean condition of the field now in corn (about the first of August,) to be sufficient work to make as good a crop of corn as any other mode which could be adopted; the corn at that time looking well, although a rather dry season.

The fallow for wheat is commenced as soon as the last crop is threshed and delivered, (say 1st of August.) Here is seen one of the neatest operations on the farm. The clover and rank weeds are run over by a harrow drawn by four stout oxen, combing down the growth of clover, weeds and grass and rendering a chain before the plough unnecessary. A four-horse plough is used for fallowing, which does the work in good style, followed by hoes to level down any accumulations of clover or weeds and fill up any holes left by the ploughs, should any part of the sod fail to fall over, then follows the roller to press down the earth and close up the furrows. The corn land intended for wheat, is likewise ploughed with four-horse ploughs, three corn rows forming the bed for wheat. Of course, all land intended for wheat is harrowed before sowing and the seed harrowed in—the harrows running over the land until the surface is made smooth and put into good condition. One and a half bushels of seed are sown per acre, generally Purple Straw, but this fall it is intended to sow mostly the Blue Stem—a variety of white wheat which yielded nearly forty bushels per acre on the "Island" this year.

No fodder is gathered from the corn on this farm, but tops are cut, which, with clover hay, furnish ample long food for the teams. Owing to this cause, sowing wheat is begun and finished sooner here than on farms where this practice prevails. Cloverseed are sown on land seeded down in wheat as early in February as practicable. As no fodder is pulled, clover is cut and made into hay, for the use of the teams. This, on a five field rotation, is not objectionable: in fact, it is doubted by some good farmers if any injury is sustained by so doing under the four field system.

Be this as it may, here the Club will see the practical fact of land yearly improving and clover cut, being an additional crop taken from the land under this system.

Present Amount of Crops.—It has been stated that some few years ago, under an injudicious and exhausting system, very little corn and a few hundred bushels of wheat were made. The present year there have been sold and retained for seed about 3,200 bushels of wheat from 169 acres of land, or nearly 20 bushels

per acre. The usual amount of corn will reach forty bushels per acre, being 3,200 bushels from eighty acres. Your committee believe that amount will be the minimum of the present crop of corn.

Means of Improvement.—Marl from the "Hundreds" farm has been applied at the rate of two hundred and fifty bushels per acre. Half that quantity is now being applied as a second dressing, and your body saw the evident improvement resulting from the second application, as evinced by the more luxuriant and greener appearance of the vegetable growth where thus applied. Putrescent manures are largely applied to the land. These are obtained by moving large quantities of straw, corn-stalks, &c. with dung obtained from the stables and such additions as are made by other stock when put on the farm lot. In addition to which may be enumerated land improved by summer stock-pens, all the offal of the wheat crop, husks and refused clover-hay. Some of all these materials are passed through the farm-lot, and more or less trod by mules and cattle, undergoing some fermentation before being carried out and applied as top-dressing to clover. Such is the situation of this farm, that no extraneous matter can be used for litter; neither is it wanted, for manual labor cannot be spared from the ordinary operations of the farm to collect material for manure, even could it be hauled in, when so much has to be carried out; first, from the lot in a state of decomposition; and in the next place, from the stack, where the straw has been kept sound until the time of its application.

Stock.—This farm has little stock on it, owing partly to the fact, that many cattle have died from disease. What stock passed in review before your committee were in fine condition. The oxen then under the yoke were fat enough to suit the palate of an English alderman! may-hap, the Lord Mayor of London himself!! Your committee saw about ten oxen and twelve or fifteen milch cows and smaller cattle. These are of the common breed of the country, crossed by an improved bull. Your committee were much pleased with a flock of sheep, consisting of some forty or fifty, in fine condition and of large size. These consist of Bakewell ewes crossed by a Reybold ram. Hogs are now being raised, and a good many were seen of different size—among them several very fine sows and a large boar. They were fat, and bid fair to give a good yield of flesh at the proper time for killing. All the stocks are under the control of a small boy or two, who keep them in proper bounds. They are grazed during the spring, summer and fall, and kept up during the winter months. The keep consists of the offal of the farm during cold weather, and suffered to graze at pleasure when a good bite of clover and grass can be had at other seasons of the year. Good and sufficient shelter is provided them when needed.

Horses and Mules.—The work is done on this farm by eight mules. One horse is kept for the use of the overseer. These were all fat—an unusual thing on most farms during this season of the year. There are fifteen field hands, eight mules and one horse, and —— oxen, which comprise the whole force on the farm.

The usual agricultural tools now to be had, of the best kinds, are used on the farm. Your committee noticed an improved M'Cormick's plough, obtained of Mr. Robert B. Bolling of Petersburg, who has had them in use on his Sandy Point estate for some time. The improvement consists of a block of wood resting on the top of the mouldboard, between it and the beam, fitted to each and curved at bottom so as to correspond with the curved mouldboard, by which the beam of the plough is raised to prevent clogging. This plough was doing good work during the visit of the Club, and the extended use of it would facilitate the great labor of a summer fallow. Smith's Chain-Band Horse-Power and Parker's Drum are used for threshing wheat.

Your committee do not think it necessary to go more into detail, and will merely remark, that when the Club reflects upon the greatly improved condition of this farm—the total absence of any attempt at display—the combination of every thing useful, yet economy manifested in every department of labor; the neat appearance of the farm and servants' dwellings; the improved health of the laborers and comfort derived from improved houses; the fine condition of the stock of every kind—all these things, combined with the manifest care in having every thing well done and at the proper time, show, on the part of Dr. Epes' friend, Col. James S. Gilliam, a well balanced and discriminating mind, so necessary in a profession requiring forethought to conceive and energy and determination to successfully carry out the many operations of agriculture.

The report here presented may be applicable to "Hundreds" farm also; but having seen this farm during a hasty visit, your committee will only say, as far as seen, it showed conclusive evidence of good management and great improvement—the style of management well agreeing with that of the "Island."

They will conclude this report by the expression of a hope, that when he returns, the owner of these farms, now in Europe, will devote his time and attention to them in such manner as to complete the good work—a work which his own interest, as well as the cause, alike demands of him.

Respectfully submitted,

CORIOLANUS RUSSELL,
JOSIAH M. JORDAN, } *Com.*

A potato gathering machine is in operation in New Hampshire. It is attached to a wagon. The wagon is placed at one end of the potato field, with oxen or horses attached, and as it

passes down the rows, digs the potatoes, separates them from the dirt, and loads them into the wagon.—*Exchange paper.*

For the Southern Planter.

EXPERIMENTS OF THE ALBEMARLE HOLE AND CORNER CLUB.

The undersigned were appointed a committee at a recent meeting of the "Albemarle Hole and Corner Club, No. 1," to prepare for publication in the "Southern Planter" an Essay on "the experiments which have been tried by the Club since its commencement, giving the substance of the most interesting of them." In executing this duty, the committee are at a loss in making the selection contemplated by the order of the Club, and deem it best to exercise no discretion in discriminating between the several experiments. They deem it more expedient to refer it to the practised judgment of the Editor of the Planter, to make such selections from the report of the committee as his more varied experience and observation of the condition and wants of the Agricultural community within the range of its circulation may suggest as valuable.

With respect to the manner in which the undersigned have discharged the duty assigned them, some of the experiments are easily and with advantage susceptible of the synoptical resumé contemplated by the Club in prescribing the duties of the committee; while others, it is obvious, derive their chief value from the minute accuracy of the details which have attended their progress. The committee have, accordingly, treated the experiments with reference to these considerations, and submit the results, respectfully, to the Editor of the Planter.

FRANK CARR,
F. E. G. CARR, } *Committee.*

Experiment on Wheat—On the Results of Cutting Wheat in the Milk State; in the Dough State; and when Fully Ripe. Tried by Dan'l F. Carr, Dr. Frank Carr, William W. Minor, Richmond Terrell and Hugh Minor.

All the experiments seem to have been made with the most precise accuracy. Three parcels of wheat were cut in every case: one when milk could be pressed out in small quantities, and when the straw under the head was still green; one in the dough state, when the grain was compressible between the finger and thumb, and the straw yellow; and one when the grain was hard and fully ripe, and the straw dry. The samples not ripe were all cured in the shade. In testing the results in each case, the same measure was filled with wheat in the several stages of ripeness, the grains counted and accurately weighed. The various experiments, allowance being made for different degrees of ripeness, which may fairly be presumed to have existed in the several samples, evince a remarkable similarity in the results. It may be worthy of remark, that in every experiment the ripe grain was the most bulky. Taking the ripe wheat as the standard, the experiments show that the loss by weight, of cutting wheat in the dough state is between five and eight per cent. and that by cutting wheat in the milk state, between forty and fifty per cent.

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Experiment—Corn.—In reference to its Distribution in Planting, as to Distance and Arrangement. Referred to Dr. John Minor, William W. Minor and George Clive.

The experiment by *Dr. Minor* was conducted in the following manner: Two rows, one stalk in the hill and one foot distance in the hill; two rows, two stalks in the hill and two feet distance in the hill; two rows, three stalks in the hill and three feet distance in the hill—all the rows at equal distances from each other.

The experiment by *Mr. Clive* was as follows: One stalk in the hill, one and a half feet apart; two stalks in the hill, three feet apart; three stalks in the hill, four and a half feet apart—rows at equal distances.

The experiment made by *Mr. William W. Minor* was conducted as follows: He planted four rows, distance of each from the other, five feet. They were on a hillside—No. 1, lowest down the hill, he left one stalk in the hill, two feet apart. The row next above, No. 2, two stalks in the hill, four feet apart. The next row above, No. 3, three stalks in a hill, six feet apart. In No. 4, the highest on the hillside, the same conditions in all respects prevailed as in No. 1, the lowest on the hillside. The results of all these experiments were in favor of the fewer stalks in the hill and shortest distances. The rows were all adjacent.

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Experiment on Top-Dressing Wheat. Conducted by Dr. William G. Carr.

He top-dressed with equal quantities of stable manure, six lots of wheat, in the first week of October, November, December, January, February and March, respectively. The land manured was thin grey highland, with a considerable admixture of sand. That without manure might have brought from three to five bushels of wheat to the acre. The manure was spread very thin, at the rate of not more than ten ox-cart loads to the acre. From the time the wheat came up until harvest, that top-dressed at the time of seeding in October, had the advantage of all the other lots. It came up more vigorously, grew faster, filled better, and ripened some days earlier than the other lots. In spite of a thick growth of blue grass, this lot yielded at least fifteen bushels to the acre, whilst that adjoining, of the same character, though not manured, did not yield

three. He was unable to discover any difference in the other lots. The top-dressing had a decidedly good effect on all, in hastening its maturity and improving the quantity and quality of the product, over the unmanured land adjoining; the crop being fully doubled on all. The fact that cold, freezing weather continued till April, and was succeeded by moist, warm weather, may account for the good effects resulting from the late manuring. Wheat, dressed with a very thin covering of straw in February, was not benefited by it, but the clover was very much improved.

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Experiment to Ascertain the Difference in the Result of Cutting Wheat when it first begins to Rust, and suffered to Stand till Thoroughly Ripe. Conducted by Dr. William G. Carr.

On the 3d day of July he cut from different spots in the field two parcels of wheat just beginning to rust, the straw and blades green, the heads turning white, and the grain in the dough state, very soft, some of the heads being in the milk state. On the 19th of the same month, he cut from the same spots, the wheat which had been left to ripen. A struck measure of the rusted wheat, thoroughly ripe, weighed 85 *grains*—the number of *grains* 232. The same measure of the wheat, just beginning to rust, weighed 89 *grains*—number of *grains* 247. Of the wheat taken from another spot, a struck measure of the ripe rusted wheat, weighed 85½ *grains*—number of *grains* 213.—The same measure of wheat, just beginning to rust, weighed 95 *grains*—number of *grains* 216. The greater difference in favor of the wheat just beginning to rust, in the second experiment, must be attributed to its being rather more matured when gathered, than the first. The straw of the unripe wheat, is, to all appearance, very superior to that of the ripe wheat, and the flouring properties of the grain are, no doubt, superior.

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Experiment on the Effect on the Product of Corn, of Pulling Fodder and Cutting Tops. Conducted by Mr. George Clive.

The average weight of several parcels, the fodder not being pulled nor tops cut, was 11¼ pounds; where fodder was pulled and tops not cut, 11¼ pounds; and when the fodder was pulled and tops cut, 11 pounds. If these several parcels and weights are multiplied by 6, the fractional parts will be got rid of, and the results of the experiment more readily compared. We will then have 120 ears, weighing 70 pounds, when the corn was left untouched, 120 ears, weighing 69 pounds, when the stalks were stripped of the fodder, but tops not cut, and 120 ears, weighing 66 pounds, when the fodder was pulled and tops cut. Now, assuming 70 pounds as the weight that all ought to have reached, there is a loss of one-seventieth by pulling fodder; and a loss of four-seventieths sustained, by both operations of pulling fodder and cutting tops.

Experiment on Fattening Hogs in a Close Pen. Conducted by Dr. Frank Carr.

On the 29th of April seven shoats, which had been littered on the 20th of the preceding February, were put up in a close pen. They were, when put up, in tolerably good order. They were slaughtered on the 14th of December following, and weighed nett 1,150 pounds, giving an average of 164½ pounds. They consumed, in bringing them to the knife, of merchantable material, 12 barrels and 1 bushel of corn and 30 bushels of bran. The corn was given to them sometimes in meal and sometimes in the grain; when in latter form, it was soaked to softness in a boiler, in which other materials for food, bran, meal, apples, pumpkins, cymlins, &c. were mixed and fermenting. The pumpkins were sometimes boiled—the cymlins always. Besides the articles of food already enumerated, the chaps about the house were made to pull for the hogs clover, grass and such weeds as hogs will eat. Two large white-oaks in the yard, which bore well, also furnished a good supply of acorns. These articles, together with peaches, with which the trees were burdened and broken, slops from the kitchen, spare milk, &c. constituted the food on which the hogs were fed. The labor required in attending them hardly deserves to be estimated. In order to give precision to the experiment and to ensure accuracy in the results, I gave them much of my personal attention, being rarely away from them more than two days at a time, and seldom that.—The children about the yard and an infirm old man, who had been many years off the tax list, gathered the fallen fruit, grass, &c. The latter, under my supervision, attended to the preparation of the food and feeding. About half a gallon of salt and three pounds of copperas were consumed in the process, and the pen was frequently supplied with charcoal.

Price of pork at time of killing was five dollars—then we have

1,150 lbs. pork at $5,		$57 50
Per Contra.		
12 bbls. 1 bushel corn at $2,	$24 40	
30 bushels bran at 10 cents,	3 00	
Salt and copperas, say	30	
Total expenses,	$27 70	27 70
Gross profit,		$29 80
Deduct value of 7 shoats when put up, at 50 cents,		3 50
Nett profit,		$26 30

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Experiment on Raising Tobacco Plants in Hot Beds. Conducted by Wm. W. Minor, Esq.

On the 21st of April, 1843, I made a hot bed containing about twenty-five square yards—sowed the next day with tobacco seed beginning to sprout. No glass was put on it, but had plank laid over it to retain the heat and moisture. The plants began to come up in

three days from sowing, and when most of them were up the plank was removed. While covered with the plank the bed needed no watering. The bed was then watered twice a day, on an average, though it was neglected, as regards water. The plants were not thick enough in the bed, nor were they regular—there being many vacant spots in it, owing to the circumstance that I had to guess at the quantity of seed, they being in a sprouted state, and, therefore, more difficult to sow with regularity. There were a few plants in this bed large enough for new-ground planting in one month after sowing. They did not, however, grow as fast after three or four weeks as did the plants in beds prepared in the usual way, though they had decidedly better roots. I think, also, that the hot bed plants grew off and lived better than those drawn from beds prepared in the usual way. This bed yielded 9,200 plants, counted as they were drawn, and would have yielded two thousand more had they not been literally burned up from neglect of watering for the space of a week. The cost of this bed I estimate as follows: the labor of two men, three women, a cart and steers, say one day, at three dollars. The manure, worth, perhaps, four dollars—a cart load of mould from the woods, which was put on the top; twice weeding, the watering, and one and a half bushels of poudrette, value one dollar, cover the entire cost. The bed was about fifteen inches in depth when sown, and it has sunk about one-fourth, and the manure is now worth about three dollars. The nett cost of this bed, then, is about five dollars—the yield 9,200 plants, and I think I hazard nothing in saying that it would have yielded 20,000 had they been distributed with tolerable regularity.

In connexion with this subject, I will remark that the action of poudrette on tobacco plants was very decided and beneficial, both on my hot bed and on other beds; on the hot bed, especially, I made an accurate experiment with it, and never saw a greater effect produced by plaster (which I have known to be very great in some cases) than was produced by this poudrette on tobacco plants.

The cost of plant beds prepared in the old way by burning, is estimated to be eight shillings per one hundred square yards, or two shillings per twenty-five square yards, without estimating the wood consumed, or manure applied, or treading, covering, weeding, &c. If, now, it requires four cords of wood at fifty cents per cord, to burn one hundred square yards, this would cost two dollars; then treading, covering, weeding, &c. the same would cost one dollar or one dollar and fifty cents; then a load of suitable manure would cost fifty cents more, and all these items would make the cost about five dollars per one hundred square yards; and ten thousand plants being the usual estimated yield to the one hundred square yards of plant land, the cost of producing the ten thousand plants by the hot bed (as it resulted with me) and in the old mode, is about the same; though I have no doubt that plants may be raised at less cost in the hot bed, than by the old fashioned mode, after further experience with them shall have pointed out the improvements of which this plan is susceptible.

WILLIAM W. MINOR.

September 23, 1843.

For the Southern Planter.

WHEAT, SOIL, AND PREPARATION.

Mr. Editor,—As the time of seeding wheat is over, and each farmer will be anxiously looking to the result of his crop, it might not be amiss to lay down a few rules for reflection, as a careful review of the past will enable us to improve in the future. It is hardly reasonable to expect a crop of wheat from all kinds of soils, and hence the many failures in the raising of crops. Soil, climate and markets should always be kept in view, and if each farmer would raise such crops or products as is best adapted to his soil, I have no doubt there would be more profit derived by the operation. From close observation for fifteen years I am satisfied that heavier crops of wheat can be raised from stiff clays than any other; and all light sandy soils are much more adapted to the growth of corn and roots. The best preparation for wheat, doubdless, is fallow, and that with as clean a surface as possible, unless it is some substance that will decay rapidly. I think I am safe in saying there can be more wheat made in single rows than any other way, and especially if the land is poor.

I am aware that I am at variance in this opinion with many distinguished farmers—however, great men sometimes commit great errors, and there is knowledge to be gained, even in farming, from a fool. Solomon says so, at any rate. But to return. There is more surface in wheat in single rows than in a level surface. Suppose you draw a straight line across an acre of land, you have seventy-two yards. Suppose you throw the land in five feet beds, elevated at the crown six inches, then measure each bed from alley to alley, and you would gain several rows—more than enough to make up for a clear water furrow in each row. The soil is also more condensed, being thrown together. And this is only a small portion of the advantages of single rows. There is at least one-third saved in ploughing the next time the land is to be cultivated, by lapping down in the alleys, and thereby deepening the soil, and the land ploughs much better. Another great advantage derived from single rows is in the seeding of wheat. There are no furrows to be marked off as guides, and I avouch that no man can seed wheat with half the ease on a flat surface, although

it may have been previously raked. I speak from experience. I seed all my wheat, and when I have an alley to walk in, the labor is light; but when the surface is level I can scarcely hold out. The best way I have tried is to have a bucket slung, with a broad strap, round the neck, and one throw of the hand is much easier than two.

Another important item in wheat raising is the ploughing. And here again I am at variance with many gentlemen of great note and practical experience,—experience, however, being my entire guide. Never having had an overseer, I may be entitled, at least, to some experience in the matter. I hold the opinion that land should be not only ploughed shallow, but exceedingly shallow, for several reasons: the surface soil has more tenacity than the subsoil, and is less liable to heave or dry to powder in high winds and freezes, and be blown away. Again, by deep ploughing the land is capable of receiving a greater quantity of water. Then by lowering the temperature of the land and encouraging acids which are poisonous to the roots of the wheat, there is too much moisture for wheat twenty times where there is too much drought once.—Clean fallow, shallow ploughing, with a quantity of surface drains to take off all superabundant water, I hold to be the best way to insure a good crop of wheat.

I have said, Mr. Editor, what I intended for the present in regard to wheat. If you think it will be of any service to your readers of the Planter you are at liberty to insert it. Hoping you and your Planter may exert an influence over the farming community of the Old Dominion that will not easily be forgotten, suffer me to subscribe myself one of your readers,

C. C. S.

Northumberland, Nov. 20, 1851.

For the Southern Planter.

TOBACCO PLANTS.

Mr. Editor,—I will here state an experiment which I tried this year in raising tobacco plants, which you may publish if you think proper. On the 13th of May I threw on some brush on one end of a bed that I previously sowed, but the plants had been destroyed by the bugs. After burning slightly I raked it well, and then put on about forty pounds of guano to twenty-five square yards; or at least, I put it on a quarter of an inch thick. I then sowed the seed and covered them with fine stable manure a quarter of an inch, and then trampled it all over. Then I put on leached ashes enough to keep the manure from getting too dry; and they were up in eight days, and in forty-two days from the day I sowed the seed I planted eighteen hundred plants, nearly overgrown, and continued to draw twice and three times a week until I finished planting my crop. After sowing the guano, as above stated, I raked it and hoed it in well before I sowed the seed, and then put on the other dressing.

I remain yours, &c.

JAMES M. CAMPBELL.

Rock Hill, Louisa, Nov. 23, 1851.

For the Southern Planter.

COMPARATIVE EXPENSE OF THE HORSE AND MULE TO THE FARMER.

Mr. Editor,—For the last four or five years I have devoted my time mostly to farming, and during that time have paid a good deal of attention to the feeding of my horses, and, therefore, have learned pretty well the expense of keeping that animal on the farm. I have long since come to the conclusion that the mule would be much cheaper as a working animal on the farm than the horse, and have, therefore, determined, as soon as I can dispose of my horses, without too much sacrifice in price, to procure a full team of them, and use them in all my farming operations. When I take into consideration the very great saving to the farmer by the use of the mule instead of the horse, it is a matter of great surprise to me that our improving and intelligent agriculturists should have delayed a thing of such importance as this to this time. I can only account for it in this way: that until within a few years past, there has been no accessible market for our surplus corn, and, therefore, it was not considered expensive to feed it away lavishly to horses; and thus having become accustomed to the horse and this wasteful mode of feeding him, our farmers have come to regard it as all right and proper. But we are now placed under very different circumstances. Canals, plank roads and railroads now offer facilities to various markets for our surplus grain of all kinds, and to continue now the old, extravagant and wasteful habits of feeding it away to horses, when a ready market and remunerating prices are offered us, is, to say the least, very bad management—management decidedly behind the times.

But a change in this respect has commenced. Some of our practical and sagacious farmers have commenced the work of reform; have dispensed with the horse and supplied themselves with mules. Some of these have assured me that they were much pleased with the exchange; so much so, that they would advise their friends to give away their horses, if they could not sell, and purchase mules.

I propose now, Mr. Editor, to give you a calculation in figures of the saving to the farmer by the use of mules instead of horses, and, for that purpose, I will take a team of ten for a period of twenty years; will suppose the horses and mules to cost at their purchase

the same price, and will estimate the difference, saved in the feeding of the mule, of Indian corn, at six barrels each per annum, or that the horse will consume twelve and the mule six barrels each per annum to keep them each in good working order.

Upon that data I make this exhibit:

10 horses will consume each 12 bbls. corn per annum, say for 20 years, which is equal to 2,400 bbls. worth on an average, $2 50 per barrel,	$6,000
Shoeing 10 horses will cost $30 per annum ($3 each, or more, which we have to pay,) say for 20 years,	600
Cost of feeding on corn, and shoeing 10 horses for 20 years,	$6,600
10 mules will consume each 6 bbls. corn per annum, say for 20 years, which is equal to 1,200 bbls. worth, on an average, $2 50 per barrel, *no expense of shoeing*,	$3,000
Amount saved in 20 years by mules,	$3,600

According to this estimate we have the surprising sum of $3,600 in twenty years, or about two hundred dollars per annum, gained or saved by having mules instead of horses; but large as this sum is, it can be fairly augmented to upwards of four thousand dollars, by taking into the calculation the greater longevity and exemption from diseases of the mule, which items are not set down in the above statement. At the end of the twenty years, how will the matter stand? In all probability the horses will all, or nearly all, be dead, while the mules, we may reasonably suppose, unless very badly treated, will all, or nearly all, be living and be good for service for some five or ten years longer.

I am, therefore, Mr. Editor, the warm advocate of the mule, and, as I before said, my determination is to give up the horse as speedily as practicable, and supply his place with the mule. Mules have been scarce and high for several years, and I have thought it a good plan to get some large mares and raise from a large jack. They can be raised at a very trifling expense, and are ready for work at an early age. I have already commenced raising, and have two now for a beginning.

If my estimate approximate to reality on this subject, and I feel great confidence it does, then it is a matter of grave importance to the whole agricultural community that they should bestow some attention to a matter which so largely concerns them.

That the mule can do as much and as efficient work as the horse, I think there is no doubt, especially if the mule have size and weight, which should be the case. Three *good* mules will draw a three-horse plough, and do as good work as three horses, and in the heat of summer fallow, which is fatal to so many horses, you never hear of any injury to the mule.

I have been for several years, Mr. Editor, an attentive reader of your very valuable journal, and have derived much pleasure and profit from it, but I have never seen an article in your paper on this subject. I should like to see it discussed and examined. I would be pleased to have the views and opinions of others, who have more experience, and if my ideas upon the subject are wrong I would like to have them corrected.

P. P. N.

Greenville, Culpeper, Va. Nov. 1851.

For the Southern Planter.

A REMEDY FOR COLIC IN HORSES.

Mr. Ruffin,—I have intended for some time to request the re-publication of "A Remedy for Colic in Horses" which appeared in the Southern Planter, Vol. III. page 47.

I have used the medicine with entire success for seven years and in several of the severest cases I ever saw. I had lost two of the best horses I owned previous to this publication. But since I have practised this way I have never, so far, had a horse to remain sick thirty minutes after giving the drench.

By the way, I would advise every man who has a sick horse to give this medicine, although he may be told by others that his horse has "the grubs," for the symptoms in both cases are alike. I said the symptoms in both cases are alike, but I must make a reserve, for I believe in ninety-nine cases out of a hundred that are said to be grubs, the horses die by colic—and grubs being found in them the cases are then decided to be grubs.

Here is the recipe:

"Take two quarts of cold water in a hand basin, add with your fire shovel, say, a pint of hot wood ashes or embers, and stir. Cut off an inch and a half from a common handful of tobacco and shred in the mixture. Stir all up and let it stand fifteen minutes and settle.—Pour off a common black bottle full of the fluid, and drench your horse. In half an hour he will be well.

"Rationale: The gas which bloats the horse is probably carbonic acid gas and light carburetted hydrogen, the product of the vegetable decomposition which is going on in the intestines; at any rate, it is a gas which is immediately absorbed by its combination with an alkali.

"The tobacco is a powerful anti-spasmodic and cathartic; it, therefore, prostrates the nervous sensibility, checks the inflammation and increases the action of the lower intestines. In a critical or extreme case it will be well to give an enema of a strong decoction of tobacco with a common syringe. Out of more than one hundred instances in which I have seen this remedy used, I have yet to witness the first failure. It also has an advantage over

very many remedies, viz: it cannot injure a horse in perfect health. Feed light for a day or two.

"*Causes of Colic.*—The main cause consists in the presence of a greater amount of food than the intestines can elaborate into nourishment, or of a kind of food difficult of digestion, producing spasm, obstruction, vegetable decomposition and consequent inflammation. *Hard driving on a full stomach* will produce colic, because the effort weakens the tone of the digestive powers and they cannot elaborate the food—which then produces irritation and inflammation. *Cold water when the horse is heated*, because it is a powerful stimulus and will produce spasm or obstruction, or by the re-action produce weakness of the digestive organs.—It also gives too much fluidity to the food—fluids are more difficult of digestion than solids. It also increases the fermentation. *Hearty feeding after hard driving*, because the stomach and intestines sympathize with the general fatigue of the system and are easily overloaded, and the appetite will induce the horse to eat more than he can digest.

"Colic is first flatulent, then inflammatory. In the flatulent stage, or in what is called belly-ache, aromatic remedies, or half a gill of spirits of turpentine, or a pint of whiskey and black pepper may be given. All these stimulate the system and may assist it in overcoming the difficulty. But in the latter and inflammatory stage, which rapidly succeeds the former, these same remedies would produce speedy death by increasing the inflammation. In nine cases out of ten this disease is not observed by the ordinary driver until it has assumed the inflammatory form—in which stage the remedy at the head of this article should be given with as little delay as possible; although it should not be omitted, even if the horse be supposed to be in the article of death itself, for I have seen them recover when every by-stander had dismissed all hope.

T. N. WELLES.

"*French Creek, Peoria Co. Nov.* 25, 1842."

Here follows a postscript which, as it is lengthy and not altogether so important, I shall omit lest I should be excluded from your columns.

Thus, sir, I have performed, as well as I was able, what I consider my duty to the community at large, and I do wish I could make it have a lasting impression upon every owner of that useful animal, the horse. I believe if it were universally attended to but few, if any, horses would be lost by that commonly fatal disease.

I am, sir, yours, most respectfully,

JAMES T. JONES.

Spring Hills, Fluvanna, Dec. 4, 1851.

We have tried a part of the above remedy, viz: the lye, making it by boiling the ashes, when we had no lye ready made, and always with perfect success. For ten years we had ten work horses, and lost only one, which would be equal to a loss of one horse in one hundred for one year, or one per cent. and that horse we did not see at all until she was dead. Our rule is, if there be a horse taken sick, to have him brought straight to us, and if it be colic, as it will be in ninety-nine cases in a hundred, we drench with lye, repeating the dose if the first have not given relief, and giving from one to five table-spoonfuls of laudanum, according to the violence of the attack. Its mode of action is stated above. To this cause, in part, we attribute the health of our teams, which is somewhat remarkable on a farm where the work is as hard as it is on a farm in the South-West Mountains. But it is also due in very considerable degree to another fact. We make it a rule to *keep too many* horses. And there is great economy in it both as regards saving feed and the wear and tear of the teams.

Sometimes we have drenched with lye so strong as to salivate the horse as badly as clover *is said* to do, making his mouth so raw that he would not eat. For the first twelve hours we disregard this. After that, if it has not ceased, we give a moderate drench of alum in strong solution, careless if it be swallowed; and this operates a speedy cure.—(Quere. Would it cure salivation resulting from summer grazing?)

ONIONS AND PEAS.

Our friend in Augusta, who asked us sometime last fall to publish a good article on Onion Culture, may see a good one here. We commend it to his attention because we know the author, and he writes "according to knowledge."

For the Southern Planter.

Mr. Editor,—When you were at my house, a short time since, I think I promised to give you, for your paper, some account of my mode of raising certain garden vegetables. If the following is, in your opinion, worthy the notice of your readers they are heartily welcome to it. To begin I will first notice

THE ONION.

This we have found always most easily raised of good size, and an abundant yield to

the land. We raise what I take to be the Dutch or Flanders onion. We pursue this plan to obtain the seed. Set out the seed onions early in March, and cultivate only enough to keep the weeds and grass under until the buttons are pretty well developed. Then permit the weeds and grass to grow at their will, so as to protect the bulb from the cold of winter. In the spring weed them well, and top-dress with hen-house manure, and cultivate as above. In this way, it will hardly ever be necessary to set out seed onions again. At least we have gathered buttons this season, large and fine, from onions *set out seven years ago*. Here it may be as well to say how we prepare our hen-house manure. The house is well littered, say six inches deep, once in two weeks during the winter, with straw.—Then a liberal sprinkle of marl is applied, and frequently ashes. In two weeks it will be found to be well trampled and *befouled*, when it is scraped up, thus mixing the ingredients which are then deposited in the garden in a heap ready for use in the spring. Pure hen dung should be applied cautiously, like guano; it *is* domestic guano.

The onion being a gross feeder, you should, when growing the bulb, manure the land well with good stable manure, spaded in well, and chopped in fine, using no rake on stiff land, such as ours is. Lay off the rows fourteen inches apart, and plant the buttons five inches from each other in the row. Let the rows be very shallow and cover them very lightly.—Deep covering is very injurious. Work thoroughly the first time, and top-dress around each button, but not too near, with the hen manure. Then cultivate as may be necessary, to keep the weeds and grass under, and also to keep the ground well stirred. But let the cultivation be as superficial as possible. We plant the last of February or first of March, though the best and finest onions we ever raised were planted the last of September. We have tried this experiment but once. We raise the White, or Silver onion, pretty much in the same way for pickles.

I will now notice

THE GARDEN PEA.

In the first place, select a good *bearer*. We have a *hybrid*, which in several years, I have, I think, nearly perfected, by planting an early and late kind in alternate rows, thus producing a pea of medium maturity, which grows *tall*, and bears at bottom while it blooms and matures at top. It may be called *a succession* pea. I will here remark when once you have a good pea, plant no other, but plant the good pea at different times, and thus procure successive crops of it without the risk of admixture. (I regret I did not give you some of my peas when you were down.) [Ditto, Tebbs.—EDITOR.]

Remember, what I am going to say further is for clay land with tenacious clay bottom. You know the soil. [Yes, very well; and tenacious and stiff enough it is, for a lower country soil, and suffering from wet too.—ED.]

We manure our square some time before Christmas with coarse, strong, stable manure. The coarser the better for me, because it acts mechanically to open my stiff soil. Spade this manure in the full depth of Ames' spade, (the only spade worth a cent)—let it remain till the first good spell in January, which generally occurs between the first and middle of the month. Then dress well and plentifully broadcast with the hen-house manure. Chop it in well with a hilling hoe; (no other sort of hoe ought to be used in a garden of stiff soil at any time)—sprinkle well with unleached ashes, and chop it in lightly with the hoe again—*use no rake on this kind of soil*. Lay the rows off four feet apart; stretch a line, and mark with the hoe helve *each side* of the line as close as possible. Plant the peas almost touching, and cover lightly with the hand, being careful to remove all clods, &c. This having been properly done, lay pieces of timber, four by three inches, (we use common fence rails,) as close to the peas as possible—fill the space between the rails level, at least, with well rotted stable manure, and cover with the pea-sticks, to prevent the depredations of fowls. When they are well out of the ground, stick them. My peas require sticks fully six feet high.

Let the rails remain during the season, as they retain the moisture, and if drought should ensue wet the manure between the rails thoroughly once or twice a week, and you will have strong, green, vigorous vines, while your neighbors', planted in the usual way, will be parched up.

Planted in this way, peas will not come up so quickly, but they *will come*, and more than all, will grow apace. One advantage of planting in this way is that you need never work them from the time they are planted till they are gathered, except to keep under the weeds and grass between the rows. Sometimes you may have to pull up a few weeds that spring up amidst the vines.

After you are done gathering your peas, plant the square in turnips, which will pay most amply for the extra manuring. [We always plant cabbages.—ED.] You will thus have two crops in the year from the same land.

Most truly, your well-wisher,

VIRGINIUS.

"Does anybody want some first rate fresh eggs for three cents a dozen?" inquired a wag one morning. There was at once a general response of "I do," "And I too," "I'll take a lot," &c. from a dozen eager voices. "Well," said the wag, "I'm going to market to purchase some eggs, and if I find any for sale at that price, I will call and let you know."

THE SOUTHERN PLANTER.

RICHMOND, JANUARY, 1852.

TERMS.

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☞ Subscriptions may begin with any number.

☞ No paper will be discontinued, until all arrearages are paid, except at the option of the Publisher.

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☞ Communications for the Southern Planter, upon *other than business matters*, may be addressed to the Editor, FRANK: G. RUFFIN, Esq. at *Shadwell, Albemarle Co., Va.*, which will insure their being more speedily attended to.

BUSINESS LETTERS will be directed as heretofore to "The Southern Planter," Richmond, Va.

☞ Postage prepaid in all cases.

TIMELY WARNING.

All subscribers who do not order a discontinuance before the commencement of the new year or volume, will be considered as desiring a continuance of their papers, and charged accordingly.

POSTAGE ON THE PLANTER.

The following are the rates of postage on the Planter, *per quarter*, for the distances annexed—to be paid quarterly in advance:

Not over 50 miles, 1¼ cents.
Over 50 and not over 300 miles, 2½ cents.
Over 300 and not over 1000 miles, 3¾ cents.
Over 1000 and not over 2000 miles, 5 cents.
Over 2000 and not over 4000 miles, 6¼ cents.
Over 4000 miles, 7½ cents.

A NEW YEAR'S SALUTATION—AND SOMETHING MORE.

It is customary at the beginning of the year for Editors of papers to salute their readers and offer their congratulations.

We think the time not unfit for some other things which we shall briefly notice. For ourselves, we have not much to say, being unable, or rather unauthorized, as far as we now see, to promise any great improvement in the Southern Planter.

Though we have added about a thousand names to the subscription list, thereby increasing its circulation about thirty per cent. its means are yet too small to justify an attempt at the improvement that we, or any other man just as well as we, could easily make. But its limits must, for a while longer, remain too narrow for that increase of reading matter, and that sort of intellectual food which we could wish to provide for the farmers of Virginia, and which they require. So, for the present, we are restricted to the purely practical, but still useful routine, that has heretofore marked the progress of our "little book." As we have said before, to obtain subscribers is as much labor as we can undertake; and it is our first duty. That close view of self-interest which marks the Northern farmer and the Yankee, and is sufficient to induce thirty thousand of them in New York alone, without the intervention of a paid agent, to subscribe to one of the several farm journals of that great State, has not yet animated our people. But it will animate them, sooner or later, and then we or some other editor, can work with brighter hopes and better fortune. "We believe in" the intelligence and energy of Virginia farmers. They have done well; they will do still better; they will regain for Old Virginia the stand she has lost, not in character, thank Heaven, but in physical superiority.

But, before they can produce such consummation, there is much to be done *for* them and *by* them. They are to be taught not only to increase their already considerable knowledge in the processes of their profession, but to take an enlarged view of its duties, to meditate its bearings, to contemplate its importance and its dignity, to know its wants, to understand the weakness of isolation and the strength of concert, and to learn upon what they should

combine—in one word, to ascertain what is to be done for their country, as well as themselves, and *to do it* with patriotism and public spirit.

There are several such things that now loudly call upon us, and demand discussion. What more vital subject, for instance, than State internal improvements? Virginia has gone backwards in the track of commerce until she ranks behind a State she gave away. New York enterprise "has turned the commerce of the St. Lawrence down the Hudson, and placed the mouth of the Mississippi as much at Sandy Hook as it is at the Balize:" whilst our equal advantages are unimproved, our resources as yet but partially developed, our mineral treasures dormant in the earth, our richest lands but little better than a desert—all because our means are wasted, our improvements conflicting and unproductive, and, in some cases, leading out of the State. How few of us understand these things: how few see the reports in which such things are set forth: and how many, when they do see them in the columns of a newspaper, pass them by to read ——— the election news! But two months ago, majorities in two counties of wealth and respectability, one Whig and one Democratic county, both containing lands of great fertility, now unproductive for want of a market, threatened armed resistance against a slight railroad impost, and vowed to destroy the work! Scarce a man among us cried shame on their folly!

Great improvements are projected. It is demonstrated that they will benefit the whole State, every part of it, that they will bring commerce and enrichment from beyond our bounds, that their revenue will relieve us of taxes, and give the means for further improvement, and people our wastes. What next? Companies are chartered—the whole conduct of the matter is entrusted to them, the people shut their eyes, even stockholders become languid and vote by proxy—until we wake up to find that thousands and millions have been squandered upon the schemes of visionary presidents, and the theories of scientific engineers! What next? We shut our eyes again, and "let the Legislature work it out for us!"

We hold conventions to produce direct trade. We make speeches and reports, we "resolve, and re-resolve, then die the same." Why? Because it takes produce to make trade, a back country to build up a commercial city. And we, the farmers of Virginia, more emphatically than at the North, the bone and sinew of the State, because we own so large a portion of its labor, we do not consider that fact, and rest satisfied that we have spent, or *misspent*, our money.

"It is not in our stars, but in ourselves, that we are underlings."

It is our fault that New York City has outstripped our cities; and it is our duty to see how it has been done, and to take counsel how it shall be *un*done. What place, did the liberality of farmers justify it, more appropriate to discuss and mature plans for this purpose, than a paper devoted to their concerns; which not only seeks to improve their lands, but also to enlarge their sphere of action, and into which politics cannot enter to distract attention or to excite prejudice.—Closely connected with commerce, as showing the locality, extent and value of our mineral and other treasures, and the practicability of getting them to market, or rendering them available, and still more intimately related to agriculture, are the questions of geological and topographical, (*i. e.* minute geographical,) surveys. An accurate geological knowledge is the basis of an enlarged, or national, system of agriculture, because indispensable to a correct classification of soils. Information of the geological structure of particular districts would often enable plain farmers to detect the quackery of "consulting agricultural chemists," and to supply the necessary ingredients of their soils, or, that being, from any cause, impossible, to adapt the crop to the soil. The same sort of information, as to the State at large, is a great, if not necessary, aid to the scientific man in analyzing soils. Yet we have put the cart before the horse, and appointed a State Agricultural Chemist before we order a geological survey. True, we commenced one some years ago, which was pronounced complete and masterly as far as it went. Maps of particular districts, and other materials of great value were laboriously prepared by Professor Rogers which now slumber on his shelves, the members of the Legisla-

ture, possibly from ignorance of its importance, having become indifferent to the undertaking, or fearing to prosecute it lest their constituents should be offended—constituents who quietly stood by and saw many hundred times more dollars than would have finished the work, heedlessly wasted upon conflicting schemes of internal improvement—constituents, who, if their representatives had properly explained this thing, would have insisted on its completion at double cost, and who, apart from all idea of direct utility, would have gloried in presenting it to the world as alike the evidence of their science and the schedule of their possessions. Truly our Legislature, though it is not its own fault, altogether, has hardly earned the title of its old Saxon prototype—*witteneage mote*, or the meeting of wise men.

Again. Take the laws of Virginia. What protection have farmers under her statutes? Thousands of worthless dogs keep out hundreds of thousands of valuable sheep, by long odds the best stock for a slaveholding farmer. But the Legislature will not remedy the evil. Talk to the members, and they tell you that "policy," which means the success of themselves, or of their party, *policy* forbids. Yet, Ohio, the very hot bed of demagogues, can tax her dogs, and defy her vagrants. Why? Because her wool-growers export eight millions of pounds of wool, and can command respect to their petitions.

With materials, in great part, of the most perishable nature, we are taxed to surround our lands with an enclosure five feet high, when four-fifths of that height, and one-half the materials would answer quite as well, and save an immense item in the aggregate expenditure. A breach, whether by accident or secret trespass, is made in the fence. The farmer, who has already given up ten per cent. of his labor to the fence must submit to the loss of as much more of it as may be caused by the entrance of stock through the breach. With him "eternal vigilance is the price of" his harvest. Try to change this thing. It will be found that the policy of our system, which, in all other cases, requires every man to take care of his own, and so to use it as to hurt no other man's, is reversed in favor of "the poor man's cow!"

We want an Agricultural Society liberally endowed. The State is ready to give us aid. But we cannot agree upon the mode in which it shall be given—cannot arrange the details. We have never thought of the matter—never discussed it with one another—never digested it, and do not know what we want. No wonder. We have no paper which serves as a medium for discussion—no common newspaper ground to meet upon.

These examples prove our defects. We do not make our remarks upon them in censorious or repining spirit, but rather, hopefully. We make them because they are true: every man who reads them knows them to be true, *feels* them to be true; and if true, they ought to be spoken of by somebody with a view to reform. Such defects, we know cannot remain. Amendment will come in time—is coming now—only rather too much at its leisure: and we would with all our power, and ten times more, if we had it, urge our people to accelerated speed in the great race of advancement, that so the men of this day might share the merit of the achievement. Virginia is a great State; she will be a greater, but we want her to be the greatest. Our object should be not to keep in sight of, or along side of other States, but to outstride them all in energy and enterprise, as we *once* did in power and renown. And when we look back to that "*once*," it should be only to gather strength from its glories, not to stop and boast of its greatness, remembering always that

> "To *have* done is to hang
> Quite out of fashion, like a rusty mail
> In monumental mockery."

This new year is the commencement of a new era. A more popular impulse has been infused into our government, and will increase its activity. Uncontrolled it may do mischief: and it behooves us to guide since we cannot stop it. On our action *now* depends whether Virginia shall rapidly ascend to the meridian, thence to diffuse a steady radiance that shall pale the brightness of other orbs in our constellation, or shall continue for a yet longer season divided in her projects and sluggish in her progress, losing, perhaps forever, her chance for pre-eminence, and forced to take position among "the lesser lights."

We commend these reflections to our read-

ers. For the rest we wish them all a happy new year. We wish them that sort of happiness which follows the successful issue of well directed efforts and high aims and noble motives—that sort of happiness which will only come when men "act well their parts." We wish them improving lands, bursting granaries, fat herds, and healthy families. So far as this world is concerned, we can wish them nothing more.

GUANO ON TOBACCO PLANT BEDS.

We have successfully tried guano as a manure for plant beds. Last winter we applied it to one, chopping it in lightly at the rate of eighteen hundred pounds per acre. The effect was excellent—as good as we could have expected in any other way. It was used on another bed in solution late in the season, after the plants had come up well, and began to suffer for want of manure. The solution was made by mixing the guano in a hogshead of water at the rate of a pound to five gallons. It was permitted to stand one day—two would have been better—and sprinkled over the plants by hand from a bucket. The watering pot was tried, but the nose became choked by the sediment of the guano. It was applied from time to time as the plants seemed to require it, until the full quantity had been put on. The bed contained about three hundred square yards, had no other manure, and had been but half burned on purpose to test the guano.—The result was most satisfactory, the plants coming in early, and continuing to grow finely: and from that bed we planted very nearly our whole crop, sixty thousand hills. If we had had a favorable season we could easily have planted the whole of it from the bed.

The other bed manured with the dry guano did just as well; but being more distant, we never had occasion to use it, and gave it away.

The quantity may seem enormous, and we would not venture to state our experiment if unconfirmed by others; but we know that Mr. William W. Minor of Gale Hill, Albemarle, from whom we got the hint, and Mr. Neil B. Gay of Fluvanna, from whom he got it, have both used the same quantity and with like success. Indeed one of Mr. Gay's guanoed beds was not burned at all, as we have understood, and yet he had better plants from that bed, than from a precisely similar one, by its side, in fact, which had been both burned and manured. The trouble of weeding was greater in the guanoed bed, but he estimated that as less than the labor of burning.

On the other hand, it is fair to state, that Mr. John R. Edmunds of Halifax, told us last summer of a case, perhaps his own, in which the guano, thus applied had failed entirely. Whether this was owing to the inferior quality of the guano, or to the fact that it was applied to the bed before the ashes were leached, (we did not think to inquire about that at the time,) or whether it is that guano will not act on some plant soils, we cannot say. We strongly incline to think it was owing to the first or second of these causes, or to both combined.

We would, by all means, advise those who choose to try it, not to make the application *until the ashes are thoroughly leached* by rain or snow, as the guano will lose its virtue if they do. Unleached ashes are as destructive to ammonia as quicklime. They have just the same properties in regard to it.

OSAGE ORANGE.

In our last number we promised to give full directions for propagating and forming hedges of the Osage orange. As our own experience with it has been limited, and we had to grope our way in making the badly grown and somewhat straggling hedge which now surrounds about two-thirds of our garden, we will take leave to draw on the more ample experience and more enlightened practice of Mr. Bateham of the Ohio Cultivator, who has grown it successfully in Columbus, where he has it now, in five years from the seed, four from its being planted, a beautiful and perfect hedge, forming a complete protection against every sort of trespasser, a part having been "submerged in water several weeks" during summer "without injury" and also much of the time during winter.

The Seed can be procured from any of the seedsmen in our cities at about one dollar a quart. Old seed, if sound, are said to be almost, if not quite, as good as new. If the kernel is white and sweet the seed is good, but if yellow or brown, or of a rancid taste, it is bad.

Preparation.—The seed must be sowed about the time of planting corn, and will not come up until the corn does. About a week or ten days before that time, pour on the seed hot, but not boiling, water, and let them soak in a warm room, by the kitchen fire, for instance, changing the water two or three times. But if you find the seed beginning to sprout, sow them immediately.

The Soil for the seed bed must be of a mellow, light, kind—sandy loam is best. In a clay soil, such as will bake after a rain, they will be almost sure to fail. If the soil is not light and sandy, procure a cart load or two of such, and cover the seed with it after sowing in drills. This is all-important.

Sowing.—A piece of ground ten yards square is large enough for a quart of seed—and, if it succeeds well, will give 3000 to 4000 plants. Work the ground up fine, as if to sow beets or onions. Drill with a line and hoe fifteen to eighteen inches apart, one and a half inches deep. Drop the seed half an inch to an inch apart and cover up an inch deep with well pulverized earth or the transported light and sandy soil. If dry weather succeeds, water the rows at evening every second or third day, till the plants appear, which will be in a week or two. Keep them clear of weeds until they are one year old.

Planting.—(Don't attempt to sow the seed where you want the hedge. It will not answer.) When the plants are a year old you may plant them. If the subsoil is poor and hard, throw it out with spade or plough too feet deep and three feet wide, and fill up the surface with earth of good quality mixed with a little rotted manure. But if the ground is such as would produce a good crop of corn without manure, nothing is necessary but to mellow it to the depth of ten or twelve inches. Make the surface fine and smooth. Stretch a line exactly where the plants are to stand, and with a spade, cut a trench ten inches deep, or less, according to the length of the roots, leaving a perpendicular side of the trench under the line, against which the plants are to stand in an upright position, one person holding them in line while another shovels fine earth upon them. Before setting the plants cut off all the tops except an inch above the ground mark, and shorten the roots to nine or ten inches long. The earth should be just level with the tops, which allows for settling without exposing the roots.

The distance of planting *in* the rows is commonly six or seven inches apart in a single line. But where a very close hedge, as for a garden, is desired, it is better to set the plants in two rows, one foot apart, and the plants in each row one foot distant in quincunx order, thus:

* * * * * * * *
* * * * * * *

But the first plan is considered quite as good for ordinary farm fences.

Keep the plants clear of weeds during the first summer, and in the fall apply a dressing of half rotted chip manure from the wood pile three inches deep along the line of plants to keep them from heaving by frost, and to keep the ground free from weeds.

Trimming must commence one year after planting. If the plants have done well, they will have from three to four shoots each, three or four feet high. Take a sharp pruning knife and a stout pair of gloves, and cut off every shoot to within six inches of the ground. This will cause the plants to throw out lateral branches, and form a thick mass of thorny shoots close to the ground. If this is not done the first year the bottom of the hedge will never after become sufficiently close to keep out small animals. No further care will then be required until the next spring. Then comes

The Second Trimming.—If the soil is good the shoots will be found, this time, to be six or eight feet high. You will hate to cut them down, but you must do it; the main shoots to within eighteen inches of the ground, and the side shoots to within six inches of the main stem—otherwise you will not have a perfect hedge.

The Third Trimming must be done the third year in the spring, cutting down the upright shoots to within three or four feet of the ground, according to the strength and closeness of the growth; also clipping the side branches within narrow limits. The work of trimming may now be done better with a bill hook, which any good blacksmith can make. The blade is fourteen inches long and about three inches wide. The back is round towards the point and one-sixth of an inch thick, so as to give

it weight for cutting, like a hatchet—the edge thin and sharp, and curved at the point—the handle seven inches long.

Another implement is also quite useful, and every man who has a hedge ought to have one, especially to use after the third or fourth year. Its handle is three feet long, and slightly bent, so that it will balance well in the hand—the blade two feet long and slightly hooked, and made as long as comports with strength. Of course it should be of the best steel, and kept perfectly sharp. It is to be used with both hands, cutting upward at the sides, and horizontally at the top, of the hedge.

A common scythe blade, or brier blade, kept sharp and in dexterous hands, is also a very good implement; and after a little practice with this, or any of the other implements, any man will become a very expert hedger.

The fourth year after the hedge is planted it may be allowed a height of four or five feet and will then be fit for a fence. The sides and tops must be trimmed each spring, or too much room will be taken up. But after it gets seven or eight years old, the growth will become slower, and less trimming will be required. It draws or exhausts the soil about six feet on each side. Allow for that.

This is the substance of what Mr. Bateham says about the Osage orange hedge, and we ask a careful consideration of it. We must confess that we have had no great luck with the plant ourselves, though we live in hopes of a hedge from it. But we pursued no such course as that here so plainly marked off for all who choose to experiment in live fences. If we had, chickens would not now be scratching the manure from our strawberry and asparagus beds, and prowlers stealing our choicest cabbage heads. We believe in the entire practicability of such a hedge. There are many in various parts of the Union; and thousands of plants are annually sold to those who farm the treeless prairies of the West. Near Philadelphia, too, we are told, by a gentleman who has seen them, of beautiful hedges twelve and fifteen years old, which, so far, answer every purpose that can be desired.—Our friend, Gen. William H. Richardson, too, near Richmond, has a fine thriving young hedge which he considers established, and which will, much more effectually than any thing he has ever tried, resist the depredations of the boatmen and others, who burn all the fences and steal all the fruit and vegetables they can lay hands on.

Undoubtedly it takes labor and some trouble to get the hedge started, and lazy men, who do things half way had better not attempt it, but we presume that with all, except, *perhaps*, those who have locust and chestnut for posts and rails, it will be much the cheapest fence, both as to first cost and durability.—According to a statement in the Ohio Cultivator of the cost of fencing in that country, the construction and timber of the most durable fence, (locust posts and pine plank,) cost from seventy-five to eighty cents for the panel of sixteen feet; whereas, at the rate of five dollars per thousand for the plants of the Osage orange, and that is thought a high price, the whole cost was estimated by Mr. Bateham at twenty-five cents for the same length, the plants being two years old and their success established. This would make a saving of sixty-six per cent. in the item of fencing there, and it certainly would be much greater in many parts of Virginia, where the fences are made of the most perishable materials.

Besides, there is a beauty in it which our common dead fences never can pretend to; indeed, we have heard it as a proverb that such an one was "as ugly as three panels of fence." Its rich dark green leaves, *which stock never eat*, and its close compact growth will add much to the beauty of a farm, whilst its peculiarly sharp spines will guard from every trespass whatever they enclose.

One other virtue it possesses—it grows perfectly well from the slip. We have seen it thus growing, so that one need not anticipate an annual bill for seed until the trees bear. We will speak more of this matter, however, in the next number. For the present we have said enough.

ERRATUM.

In our last, in reply to Mr. Turner's query, we inadvertently used the word "gallon" where we should have said "bushel." A bushel of cloverseed (or one gallon per acre) is the usual allowance for eight acres of land.

ESSAYS BY THE HOLE AND CORNER CLUB.

Some short time since at a meeting of the Hole and Corner Club, No. 1, of Albemarle, the President divided the Club in seven committees, each one of which was to contribute to the Southern Planter an essay upon some subject of practical agriculture.

Two of them have been handed in and are published in this number of our paper. The one by Messrs. F. and F. G. G. Carr, giving a synopsis of some interesting experiments made by the Club at various times, will be found very interesting. The other, by Messrs. Garth and Noland, being the first of a series on the Cultivation of Tobacco, will command general attention. Mr. Garth is one of the best farmers in the State, and his skill in tobacco is somewhat remarkable.

By-the-by, a friend in the lower country told us that some one had complained to him of our having too much about tobacco in the Planter. We were somewhat surprised at this, as we have up to this time had only two essays on the subject, Mr. Gilmer's, and this of Messrs. Garth and Noland; and both so much above the average of general communications in interest and ability that we could not well have avoided publishing them, even if they had been supernumeraries, which they are not.

We shall always be happy to publish as good essays on other subjects, and hope we shall have an opportunity of proving it in the case of our objector.

A GOOD GARDENING BOOK.

We frequently hear ladies asking for a good gardening book. We have tried and can recommend to them Buist's Family Kitchen Gardener, as the best, all things considered, that we are acquainted with. As several of the labors of the garden will commence the first open weather, we advise all who feel the want of such a book to procure it without delay. It may be had of Mr. J. W. Randolph and other booksellers in Richmond, and can be easily procured by other booksellers in the State.

When an implement is no longer wanted for the season, clean it and lay it carefully aside.

For the Southern Planter.

ON THE MANAGEMENT AND APPLICATION OF MANURES.

Mr. Editor,—In the last number of your most valuable Virginia paper, under this head and over the signature of "H. P. S." is an essay on a subject of vital interest to this inland part of country, relying as it is compelled to do mostly upon putrescent manures for renovating its worn-out soils. This piece, though well written, is not of that clearness and precision which characterized Mr. Shepperd's, else, perhaps, our mind would not be at so great a loss to comprehend it. It may be the subject itself is so dubious as not to admit of being "clearly demonstrated."

If I understand Mr. H. P. S. the two different practices of using manure are, first, that of heaping the litter to promote decomposition; and second, that of carrying it out in a more unrotted state. To mix up with these practices the different opinions upon which they are founded, is to discuss the different, and sometimes, mistaken views of farmers; which identical views, in different persons, lead to different practice, and which different views lead to the same identical practice in different persons. For instance, two farmers entertain identically the same views as to the evaporation of manure; and one ploughs his cow-pens; for, says he, in escaping it will thereby, necessarily, leave the larger and more fertilizing portion of its gases impregnated with the soil. The other leaves his cow-pens unploughed; for, says he, the practice of covering manure with the soil to prevent evaporation and the loss of what is conceived to be fertilizing gases is the most effectual way to favor their escape.

Again; practical men have found it expedient to adopt different modes to obtain the same result under different circumstances.—Let me again illustrate. Two of my neighbors, successful and practical farmers, Messrs. Thornton and Hamlet, knowing that farm-pen litter must necessarily decompose before it can act as a fertilizer, pursue quite opposite courses in attaining that end. Mr. Thornton takes his long manure from the pen as trodden all winter, spreads and ploughs it in on branch flats for tobacco, and the moisture of his flats, the temperature of spring, and the access of atmospheric air, combine as three indispensable conditions of fermentation, producing decomposition at the most favorable time for the crop. Mr. Hamlet finds it most expedient to heap his manure to facilitate decomposition before he spreads it upon his red, thirsty, high and dry lots; for a dry season will leave him without one of the three requisites for fermentation, sct. moisture arresting decomposition at the most fatal time for his crop.(*a*)

Now, it seems to me to be the more legitimate province of correspondents of agricultural papers to reconcile these discrepancies

with science and with each other. Not by introducing exploded schemes of would-have-been scientifics; or the dogmas of bigoted theorists; but by comparing well authenticated facts with fundamental long established science.

Will Mr. H. P. S. who is a scientific man, or yourself, or some of your numerous and clear-headed correspondents tell us, in plain words, if we must plough our summer cow-pens, or leave them to the summer's sun and winter's rain till next spring for a crop of tobacco?(*b*). We think they ought to be ploughed before trodden, so as to more effectually imbibe the urine as well as the excrement; and reploughed when the cows are taken off.

Another question seems to be involved in this: Is manure a fertilizer only while it is decomposing? Again; do we understand you in your note, page 333, if manure is hauled out three or four weeks before you can use it, say, in seeding oats, it had better be spread and exposed to the weather than to remain in heaps? I apprehend the rank spots of oats pointed out by an *experienced farmer*, were rather the result of imperfectly spreading. That is, all the manure and part of the soil should have been spread, leaving the soaking alone on the spot.(*c.*)

As to the two different mothers of plants, the earth and the atmosphere, and their respective provinces, I confess, if true, I am utterly unable to comprehend. Earth, I suppose, is the mother of tobacco and corn, hence the origin of "*killing up corn.*" And vines are the legitimate offspring of the atmosphere; hence, the paleness of young garden pea-vines when covered with a rail to prevent the chickens from scratching them up. Each parent has different offices and distinct functions to perform, and man cannot, by any contrivance, cause the one to encroach upon the province of the other.

But how Mr. H. P. S. arrives at the conclusion that unfermented manure, instead of being covered in the earth should be spread upon the surface, I cannot see. For if, as he says, "the earth and the atmosphere, by their peculiar attractions, draw to themselves all the food of plants contained in manures, whether such manures be under the ground or above it, and the interference of man may injuriously retard, but cannot prevent it:" then, if manures be covered, why, it will make no difference, for the atmosphere can do her office still, and if left on the surface the earth can still draw her portion. All his caution against "*renovaters* and *fertilizers*," I think is entirely unnecessary. We have too few experimenters in the neighborhood of

ROUGH CREEK.

November 20, 1851.

a We must confess that we see no discrepancy in the theory of Messrs. Thornton and Hamlin, but only a difference in practice, owing to dissimilarity in the soils they respectively cultivate. Mr. Hamlin finds his land so porous that coarse, unfermented farm-pen manure ploughed in upon it actually prevents the absorption of moisture enough to decompose the manure. So by a *partial*, and, *therefore*, very injurious fermentation, he reduces it to a finer texture before he applies it. But with Mr. Thornton this is not necessary; his moister and more fertile soil not suffering this inconvenience. So he applies long dung. Both the gentlemen, each with judgment, because each, according to the necessities of his case, cover up the manure to ferment it in time for the crop, say, of tobacco. Now it is very true that, unless the soil, or some of its constituents, clay, for instance, can appropriate to itself, and store up for future uses, the parts that are commonly thought to escape in the fermentative process, that each sustains a loss; but he sustains this loss, if at all, in order that the residue may afford an abundant supply of food for the tobacco. Whether the particular mode of application is best in these cases depends on certain economic as well as scientific and agricultural considerations, upon which we do not feel quite competent to decide. But it is our opinion that if clover well manured will produce tobacco on the lands in question, then long dung ought by all means to be applied as a top-dressing to that crop as the antecedent for tobacco. But if it will not, then they will make more money by pursuing the present plan, and money is the main point with every farmer. There is still another plan, deemed very objectionable by many farmers, to which we incline with some favor in preference to the later spring application, partly in consequence of our own experiments, but mainly from weight of authority. We allude to the practice of "spreading upon the land fresh, strawy manure, and to leave it till the ploughings of spring commence." But we have not space here to enlarge upon it.

b Do not by any means plough up cow-pens, either before or after the cattle. Before, it is useless; after, it is injurious. Without going into the science of the matter, which might confuse us as well as our readers, we appeal to facts, and to high authority. When we first commenced farming, a very experienced and observant friend, to whose guidance in most things agricultural, we cheerfully sub-

mitted, advised us against the plan of breaking up cow-pens. He had learnt by experience, years before—and now in Albemarle we cannot call to mind a farmer who ploughs up an abandoned fold. Indeed the longer it is left, the greater is the improvement. If you must cover up its surface, do it with leaves secured in their place by brush, or by straw, or mowed bushes, in a word, by shade. Our "high authority" is Von Thaër, who says, "Although this proceeding," burying the manure after folding, "is universally adopted, I have my doubts as to the eligibility of it, since I have learned of several experiments having been made by agricultural friends of mine who assert that they have seen the *most* beneficial effects resulting from folding *when the manure was suffered to remain on the surface of the soil for a considerable period.*"—Principles of Agriculture, Skinner's Edition of 1846, p. 212.—This may be against science, as commonly taught, but it is *a fact* that science will have to come around to: and the contrary practice has been adopted because men prefer following a theory to taking the trouble to observe and reflect for themselves.

c We do say, unequivocally, that manure ought not to remain on the field in small piles two days. In the first place, such manure leaches like a lye hopper, in the next the winds carry off much of the volatile part, and lastly, it may, and most likely will, begin to ferment without the ability, in consequence of its small bulk, to finish the process, and half fermented manure, like most half way things, is mean stuff, do what you will with it. We had forgotten when we touched this point before that the same strong witness, Von Thaër, was on our side. "And the places," says he, "where these heaps have been, will be marked by the rank growth of the crop, often for several years, whilst the surrounding parts present an impoverished appearance. It should, therefore, be made an invariable rule, that the manure should be spread as soon as deposited from the cart."—p. 212.—Editor.

State Agricultural Society.—We call attention to the communication of "Arator" in a succeeding page, and second his proposition. Let us have a full and general meeting on Thurrday, 19th of February, determined to *do* something, and good must come of it.

HOT BEDS.

The preparation of hot beds is a very important part of the market gardener's system, for by them he is able, not only to bring several species of plants to perfection, even in winter and early spring, but he starts a great many plants that are to be perfected in the open air. In some cases a small space in a hot bed will be sufficient to start a large number of plants, the cost of starting which is a mere trifle compared with the price of the crop in the market. Therefore the gardener can well afford to incur the expense of this artificial mode of forwarding plants, and watch them with constant care, for weeks, and even for months, when necessary.

The mode pursued by the market gardener will answer, on a small scale, for the farmer, or any one who would grow vegetables for his own use. A friend has suggested that he can give a good method of making a farmer's hot bed, without glass and with very little trouble. He will oblige us by sending it soon. The hot bed system of forwarding plants, and of perfecting many in the cold season, is practised to a large extent in this vicinity. Some commence their hot beds as early as November, and perfect plants which they have started in the open air in the fall; and they keep hot beds in operation through the winter and spring. But we would not advise a person who has no experience in producing artificial heat for plants to commence early in the season, but begin in the spring and gain experience before going into the business extensively, and in a season of difficult management for the unexperienced.

Generally a location slanting to the south has been considered most eligible; but experience dictates that the slope should be rather to the south-east, to take the morning sun. A tolerably steep slope is best, but a level surface will answer for the location, and many are under the necessity of using such. A hill or mountain on the back side is an excellent natural barrier against cold winds, but for the want of these it is desirable to have a close wall or fence of good height.

No matter as to the soil of the situation chosen for hot beds, as a soil must be made and suitable kinds for the different plants. For instance, for radishes, sand or sandy loam; for lettuce, a rich soil with a good portion of well decomposed manure.

A good size for sash is six feet long, by three feet wide. The length is from front

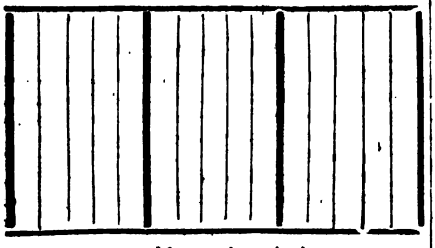
to back, and a long continuous hot bed is made, and these sashes are laid by the side of each other to cover it. Each sash has four small bars running lengthwise, which gives five rows of glass, six inches wide. There is no cross work, but the panes of glass are lapped, and as the sash slants considerably, the water runs off, as on a shingled roof.

The glass generally used is six by four inches. This is less liable to break than a large size. Some use a still narrower size, remarking that notwithstanding the increase of bars in such case, there is heat enough. But a narrower size would cost more both for sash and glass.

In making a hot bed, it is better to dig down so as to have it mostly below a level with the surface of the earth, as it will be less liable to be affected by the changes of weather. The frame of the hot bed should be made of planks or stout boards; and the front and back should be just far enough apart for the sash to cover them well. The front plank should be about six inches lower than the back. This will give a descent in the glass of one inch to the foot.

The pit in the frame should be about two and a half feet in depth. When the hot bed is made in winter there should be one and a half feet of clear manure placed in the bottom; and this manure should begin to ferment before put into the bed, and put in hot. As the weather grows milder, one foot will be sufficient. On this should be placed a soil and manure adapted to the plants to be cultivated, as we have already named, and the depth depends on the kind of plants to be started. For lettuce, about six or eight inches of soil; and for radishes, eight to twelve inches.

A bed with twenty sashes is long enough for convenience, on account of crossing over. The following rough sketch, made with the printer's materials, represent a bed with three sashes. The large lines represent the sash, the smaller ones the small bars between the sash frames.



In severe cold weather, it is necessary to cover hot beds with straw mats; and yet in the coldest weather the beds must be generally opened a little daily, to let off the foul air, and sometimes to allow the superfluous heat to escape. The greatest danger is from too much heat, especially when there is a hot sun and the beds fresh; with the heat from below and from above, the plants are liable to be killed suddenly for want of air.

In beds for winter use, it is necessary to put hot manure down on the outside of the frames of the hot bed, else it will become comparatively cool near the sides.

The digging of the pit and the filling in of manure, and the soil on it, should be so regulated that when the whole is completed, the glass in front will be about four inches above the soil; and the surface earth in the hot bed should have a gentle inclination to the front. If the glass is placed higher, there will be less heat, and a deficiency in front, which is the cooler part.

We are informed that Mr. Cephas Brackett, of Brighton, manufactures sashes for hot beds; or furnishes the sash glazed. The usual price of sash, of the dimensions we have given, is eighty cents each. The cost of glass is from one dollar and fifty cents to six dollars for one hundred square feet, according to quality. Tolerably thin glass answers well with care, and it is light to handle.

From the Wool Grower.

AMERICAN *VS.* EUROPEAN SHEEP HUSBANDRY.

Sheep breeding must now be considered a leading branch of American husbandry. There may be found at the present day high bred Merino flocks in New York, Vermont and Pennsylvania, excelling by far the Spanish mother herds originally imported from the sunny plains of Estremadora and Valencia. Our monthly "Wool Grower's Register" bears ample witness of the superior management of some choice Saxony flocks in Ohio, Kentucky and Tennessee. The prairie States are rapidly filling up with improved stock from the East. The South is waking up to its true interest. Colonel Randall's letters have produced a wonderful change in public opinion, and all for the better in those regions. There is, perhaps, no country in the world more favorable for the raising of grade sheep than the highlands of Texas and New

Mexico. In fact, wool growing is on the ascent and will continue so for years to come in spite of all the political or financial changes that may occur from time to time in the administrative policy of the country. It has been frequently proved through the columns of this periodical that the demand for wool exceeds the production not only in this country but in all parts of the civilized world. But we may stretch our point to a larger extent, when we contend that the United States are destined by nature, and finally must be the great, and principal wool producing country, for the Eastern and Western Continents. Various circumstances coincide to corroborate such an assumption. It is a well known fact that Germany, the largest wool growing country in Europe, producing hardly any other kinds of wool than the high and middle grades of Saxony and Merino, or Electoral and Infantado wool, is mainly dependent on English, French and Belgian manufactures, for the consumption of that product.

Now, there are several causes which tend to place it almost beyond any reasonable doubt, that fine wool growing in the middle parts of Europe, must meet with a repulsive and retrograding check ere long These causes are both of a physical and political nature. In regard to the first, we know that the breeding of fine sheep is mainly and entirely in the hands of the owners of the large landed estates, and that the small farmer is wholly excluded from any participation in that branch of husbandry. As the population of these countries is becoming more dense from year to year, natural pasture is growing scanty, as they are wanted for the necessary supply of breadstuffs. Artificial pasturing has to be resorted to, and for the last thirty or forty years has been the only support of these extensive flocks of fine sheep. But in spite of the rapid advancement agricultural science has made in recent times, the principal levers of this artificial system of feeding have proved to be entirely inadequate. Clover, which furnishes the main element of summer pasture, has become tired out in most places, and the potato rot, growing more pestiferous from year to year, is steadily depriving these sheep owners of the very power of maintaining the existence of their sheep during the winter.

It would lead us too far from our subject, to inquire into all the particulars of these well established facts. They are a matter of bitter complaint and great anxiety for the future with many a wool grower in those countries. But hard to overcome as these difficulties may be, the science of revigorating worn out lands, and manufacturing bountiful crops, has attained such an eminence in later times that there is hope left to remedy these evils.

The political danger awaiting the future destiny of fine wool growing in central Europe, is, however, of a far more dangerous character. No man, in the least acquainted with the present political state of Europe, will deny that they are deficient of every element of stability.

But this revolution, or rather this general overthrow of matters, existing for the time, will be a deadly strife against the present distribution of real estate. That it will end in the destruction of all the privileges of the large land owners, and in the division of these large tracts into smaller lots for the benefit of the masses, there cannot be the least doubt. This will be the death blow to fine wool growing in the middle parts of Europe. There is but one country which may escape this general destruction—Russia, a country which presents many advantages to sheep breeding on an extensive scale. But its vast population is consuming nearly all it produces of the finer grades of wool, and the coarser kinds, which are mainly raised in the South, and mostly exported from the port of Odessa, where they find their way to the United States, are only fit for the manufacture of the most inferior kinds of woollen goods, and will never do any injury to our own production.

The next future and long years to come, present, therefore, a most cheering aspect to the cause of fine wool growing in this country, and will undoubtedly tend to the development of renewed exertion, and useful enterprise in this important branch of national industry.

EXTRACT FROM A LETTER.

"*Weldon, N. C. Dec.* 19, 1851.

"I have time to read very little in the Planter, but some single communication I think worth more than a year's subscription, so I am not going to give it up, read or not read. * * * *

"In conclusion, I would say that I should be greatly pleased for W. Timberlake, Esq. to continue his communications, even down to a hen-house, for a man of his clear head can give us a great deal of information really useful."

For the Southern Planter.

STATE AGRICULTURAL SOCIETY.

I was gratified to observe in the last Southern Planter, the proposition of "AN OLD SUBSCRIBER," to renew the effort to rally the friends of agriculture, by a general meeting of all those who can be induced to take an interest in the subject, at some time during the approaching session of the Legislature. I cordially second the proposition, and to give it a more definite shape. I propose Thursday, the 19th of February next, at 7½ o'clock, in the Hall of the House of Delegates, as the time and place of meeting. Let us have a general meeting of the Virginia State Agricultural Society, and let the Executive Committee take measures, such as the occasion calls for, to give effect to the meeting, and who can tell but that all our past disappointments and discouragements may give place to hope and encouragement, and the agriculture of Virginia be at least elevated to the high position its great and paramount importance entitles it to occupy.

ARATOR.

From the New England Farmer.

THE POTATO—ITS PROCESS OF VEGETATION.

Mr. Editor,—When digging my potatoes, I have observed with special care, the manner in which the vines, roots and tubers grow from the parent potato. The planted parent tuber I find has, in all cases, propagated vines, roots and tubers from only one end, that from which the first sprouts start in our cellars, at the return of spring; and it is the end or section of the tuber opposite that to which the original stem grew, connecting the tuber with its parent. The whole growth from a single potato I find also joined to it, sometimes only at one point, sometimes at two, and never at more than three, and these in close proximity. The whole propagation has proceeded from one, two, or three *eyes*, as they are usually called. The old tuber, in some hills, is found wholly decomposed, except its pellicle, and in such instances the yield is greatest. Some old tubers are partially rotten, through natural decay, and others remain in their original shape and form, but light and watery. *From one to three eyes only* actually vegetate from the largest potatoes I have thus inspected, the others remaining inert. At these single points the parent tuber has expended its strength, and the substance of it has been exhausted, and doubtless the whole tuber has had an important office to perform in the product resulting. If the parent tuber has been decomposed and lost in the progress of vegetation through the season, I am convinced that it has not been useless, and therefore, that the practice of cutting apart potatoes before planting is unwise and unphilosophical. And the corky, or rotten, or watery, lifeless state of many parent tubers, indicates that they must have parted with important qualities in the vegetating process, necessary for the healthiest and fullest production of the new tubers.

There are two kinds of roots propagated in the growth of the potato. The first is fibrous, and shoots downwards and laterally, and loves to find a deep, friendly subsoil, allowing them to penetrate beyond the reach of droughts. These are sustaining, absorbent roots, essential to the life and growth of both the vine-stalks and of newly formed tubers. The other kind of branching roots propagate tubers, and shoot out from the main root, near its junction with the parent tuber, and grow to different lengths, sometimes in good soil to the distance of twelve, and even eighteen inches, and always terminating in a tuber which they feed. Frequently, a young tuber sends out a root from its extremity, and this propagates one or more tubers, or else the root protrudes from the ground and forms a vine. This demonstrates that *the tuber-producing roots are of exactly the same nature as the vines.*

Last May, I planted a potato which had been dug in the fall of 1849, eighteen months before, and which had been under a box during the summer of 1850. In that position it had propagated several small branch-like vines, upon which were formed a large number of little tubers, of the size of small peas. It had been exposed to the air of the cellar, through the preceding winter, in that germinant state, and thus was planted the parent with its offshoots. The vines grew thriftily, and upon digging, I found *forty-two* tubers had grown in the hill, all small, and yet differing in size, proportionally to the size of the small tubers planted. They were evidently the same tubers that I planted, only expended by vegetation. Thus the *suspension* of growth did not prevent them from resuming the original process of vegetation when placed in the ground, and in a condition favorable to the vegetating tendency, which began to be developed twelve months before the time of planting: I infer that the principle, that the rot of potatoes arises

from the decay of vegetable life in the parent tubers, is groundless. I also infer that the small growth of the tubers was occasioned by the exhaustion of the parent tuber, in its vegetating efforts in the cellar, during the summer of 1850. It had become cork like and dry when I planted it, and therefore its offspring depended for their aliment upon new fibrous absorbent roots, shooting into the soil from the tuber roots.

My observations upon the depth to which the absorbent roots of potatoes are inclined to penetrate, convinces me that they demand a deep permeable rich soil for their greatest productiveness. The number of tubers is greatly aided by a soil best suited to the extension of tuber roots, and by broad, mellow hills. One peach-blow potato's tuber root penetrated, in my garden, six or eight inches below the parent, and there formed the largest tuber of the whole crop. Why? On inspection, I found a quantity of loose limestone sand just around and beneath it. A fact I hope to remember for future experiment.

J. LEE.

Salisbury, Conn. Sept. 27, 1851.

BOTTOM LANDS OVERRATED.

We think that the value of river bottoms, when compared with fair upland, has been and still is much overrated. For the first few years of cultivation, the bottoms produce heavy crops, with less labor than the hill land. But this state of things is of short duration, unless the low land is within the reach of freshets, and thus receives, as it were, an annual coat of manure from the turbid waters of the stream.

An EXCESS of vegetable matter in soil is of no more use than any other ingredient, and without a due proportion of the mineral or alkaline constituents, it would not bring a crop to maturity. A light spongy rich piece of bottom, is more likely to suffer from drouth than a well composed loam. The changes from wet to dry are more marked in black mould than in loam, because the latter holds on to its moisture with more tenacity. To make good upland proof against drouth, it is only necessary to stir it well; and the SUBSOIL PLOUGH produces in this respect a wonderful effect. It operates, by stirring the mass to a great depth, into which the surplus rain and moisture settles in a wet time, to be held in reserve for a dry one. Bottom land engenders weeds and useless herbage so much faster than upland, that in order to keep it clean, a greater amount of labor is necessary.—As in the process of cultivation the vegetable aliment is extracted, it is not so easily replaced in bottom as in upland.

In bottom lands, the alkalies become first exhausted, and our ordinary stable manure does not replace them. The variety of crops is greater on upland than lowland. We all know the benefit of a change of crops. It is like a change of labor to the human body—it amounts to rest or to relief, and is still labor and profit.

Idleness also produces rest, but no profit; but if a man who has been working half the day, and is fatigued, sits down to his lapstone the other half, he becomes equally rested, and at the same time makes a pair of shoes. Soil is, in this respect, very much like man; it becomes rested by change of crop, and yet loses no time.

It is, therefore, a great advantage to have a soil that will produce the greatest variety of crops. Upland is also better for fruit. For grass, it is frequently as good as bottom land, only it requires more and better preparation—*West. Agriculturist.*

THE LUNGS.—On examination, the lungs will be found full of innumerable little holes like a sponge. These holes are the cells into which the air enters when we breathe. So great is their number, that they have been calculated to amount to 170,000,000, forming a surface thirty times greater than the human body.—Every one of these cells is provided with a net-work of blood vessels, by which means the blood is brought into immediate contact with the air, every portion of the surface.—When this great amount is taken into consideration, we shall at once feel how necessary it is to supply pure air to the lungs with every breath we breathe.—*Germantown Telegraph.*

PAYMENTS TO THE SOUTHERN PLANTER,

From the 25th of Nov. to the 1st of January, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

James B. Jones, to Jan. 1853,	$2 00
Samuel R. Wingfield, to Jan. 1853,	1 00
James Roane, to July, 1852,	1 00
Dr. B. Fleet, to July, 1852,	1 00
James H. King, to Jan. 1852,	1 00
Dr. R. H. Tebbs. to Jan. 1852,	7 00
Thos. S. Jones, to Jan. 1852,	3 00
Geo. W. Bassett, to Jan. 1847,	1 00

H. D. Burruss, to Oct. 1852, in full, $0 75
Maj. Wm. Hill, to Oct. 1852, 1 00
Mr. Wood, to Jan. 1853, 1 00
Col. C. C. Cocke, to Sept. 1852, 1 00
Robt. B. Hughes, to Jan. 1853, 1 00
Jos. S. Yarbrough, to July, 1851, 1 00
P. P. Nalle, to Jan. 1851, 2 00
S. Bassett French, to Jan. 1853, 1 00
Richard Thornton, to January, 1853, 1 00
B. W. Leigh, to January, 1853, 2 00
Andrew L. Mills, to July, 1852, 1 00
Elisha Chewning, to July, 1852, 1 00
Wm. Anderson, Jr. to January, 1852, 2 00
Robert Stringfellow, to January, 1851, 1 00
W. R. Jennings, to January, 1852, 2 50
W. B. Hudnall, to July, 1852, 3 00
Stephen A. Norfleet, to January, 1853, 3 00
Capt. Thos. Nelson, to January, 1853, 1 00
Josiah Ely, to January, 1852, 1 00
James Venable, to July, 1852, 1 00
T. T. Treadway, to January, 1854, 5 00
Richard Hill, Jr. to January, 1852, 2 00
John M. Baker, to January, 1852, 1 00
Milton Kirtley, to January, 1853, 1 00
Dr. Thomas Withers, to January, 1853, 1 00
Charles Trour, to January, 1853, 1 00
Edward C. Turner, to January, 1853, 1 00
R. C. L. Moncure, to January, 1853, 1 00
Samuel L. Brooke, to January, 1853, 1 00
John Schooler, to January, 1853, 1 00
J. M. Conway, to January, 1853, 1 00
P. D. G. Hedgman, to January, 1853, 1 00
William Bagby, to January, 1852, 1 00
John W. Palmer, to January, 1852, 1 00
Maj. George Wilson, to January, 1853, 1 00
Col. W. W. Newton, to September, 1852, 1 00
F. M. Clack, to January, 1851, 2 00
James P. Corbin, to January, 1855, 5 00
S. M. Baker, to July, 1852, 1 00
Jos. D. Jenkins, to January, 1854, 3 00
C. D. Pettus, to January, 1853, 1 00
Capt. W. E. Britton, to January, 1853, 1 00
John Wickham, to September, 1852, 1 00
Dr. John Butler, to July, 1852, 3 00
Fr. Fitzgerald, to January, 1853, 1 00
Dr. Geo. Fitzgerald, to January, 1853, 1 00
Dr. Edwin P. Talley, to January, 1853, 1 00
James Hart, to January, 1852, 2 00
W. W. Michaux, to July, 1852, 2 00
James T. Jones, to January, 1853, 1 00
Robert Tinsley, to January, 1853, 2 00
Z. D. Tinsley, to January, 1853, 1 00
J. R. Fitchett, to January, 1852, 1 25
John B. Whitehead, to January, 1852, 3 00
Nich. Querenberry, to January, 1853, 2 25
R. W. Brooks, to January, 1852, 3 00
Wm. P. Shepherd, to January, 1853, 1 00
Benj. W. Wheeler, to January, 1853,
Wm. B. Turner, to January, 1853,
Henry G. Roberts, to January, 1853, 4 17
John P. Roberts, to January, 1853,
Henry H. Roberts, to January, 1853,
Capt. C. Breckenridge, to Jan. 1853, 4 00
R. T. Hubard, to January, 1853, 1 00
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PROSPECTUS

OF

THE SOUTHERN PLANTER,

PUBLISHED AT

RICHMOND, VIRGINIA.

THE undersigned, the one as Editor, the other as Proprietor and Publisher of "The Southern Planter," which is the only Agricultural paper published in Virginia, desire to make it worthy of the support of the farmers of the whole State. In order to get the subscription necessary to enable them to do this, they have decided, at the instance of a few friends, and as a means of giving general notice of their undertaking, to issue a short prospectus, or rather heading to a subscription list, which they will take the liberty of forwarding to such as they think will aid them in obtaining subscribers.

This paper, though decidedly Southern in its sentiments, will be neutral in politics, and shall be devoted entirely to Agriculture and to topics bearing upon it. As it will look to the interests of the whole State, both East and West, it is hoped that in collecting the views of our most eminent farmers, as far as they can be induced to give them, it will tend greatly to introduce our people to each other, and to let them see, that however we may differ on local questions, we are still sons of the same mother, with the same general sympathies and sentiments.

The Editor is a farmer engrossed in Agricultural pursuits, and wholly dependent on his land for his living. This may be considered to some extent a guarantee of the practical character of the work.

If adequately sustained, the subscribers hope to give every man the full value of his subscription. And not seeking to dislodge other papers from any foothold they may have obtained, they only ask of their fellow-citizens a fair trial of their own.

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THE PLANTER is published monthly at Richmond, Virginia, on fine paper, containing 32 super-royal octavo pages monthly, making a volume of 384 pages of Agricultural matter, per annum, for $1 25, which may be discharged by the payment of

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Richmond, March 12, 1851.—1y

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ja 1851—tf

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Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, EDITOR. P. D. BERNARD, PROPRIETOR.

VOL. XII. RICHMOND, FEBRUARY, 1852. No. 2.

For the Southern Planter.

PLASTER OF PARIS *vs.* AMMONIA.

The action of plaster of Paris, when mingled with a manure heap, or with guano, is a question of great practical interest to the farmer. If it have no beneficial influence, then, is much money wasted in the purchase of plaster, and much labor lost in effecting its mixture. But if it be salutary, if it really exert a conservative power in arresting and combining with the escaping ammonia, then is much more lost by the neglect to use and profit by so important an auxiliary in fertilizing soils.

This is a chemical question and ought to be susceptible of easy solution by reference to chemical principles and chemical authorities. It may also be decided by well conducted, accurate experiments on the part of the cultivators of the soil. It is unfortunate for the first mode of solution that the dicta of the chemists are utterly contradictory. They do not agree upon first principles. Edward Turner, in his Elements of Chemistry, a Text Book in many of our Colleges, lays it down as an elementary fact, that lime will separate sulphuric acid from ammonia and combine with it. See Turner, page 125. Here is certainly a strong authority against the advocates of plaster. It is essential to their theory that the reverse should be true; that ammonia should separate sulphuric acid from lime; decomposing the plaster, combining with the acid, and forming a sulphate of ammonia: by this means the volatile alkali which was about to escape from the soil being saved as a food for the crops. And this has been the general idea diffused in the periodical literature.

Boussingault states that gypsum in *solution*, will accomplish this object, but that in a state of moist powder, the gypsum is indifferent towards ammonia; nay more, that the law of affinity is reversed and that carbonate of lime decomposes sulphate of ammonia. "To explain this contradiction he quotes Berthollet and the following singular law: If two saline *solutions*, which will form between them an insoluble salt, be mixed, that *insoluble* salt will be formed and precipitated; but if the two salts containing between them a soluble salt, be mixed in a *moist, pulverulent* state, the *volatile* salt will be produced. Thus sulphate of lime and carbonate of ammonia in *solution*, produce carbonate of lime, which is insoluble, leaving sulphate of ammonia, which is soluble though not volatile. But carbonate of lime mixed with sulphate of ammonia in a state of *moist powder*, acting by an opposite interchange, produces carbonate of ammonia, a volatile salt, and sulphate of lime." (I quote from the American Farmer, page 184, of the present volume, not having a copy of Boussingault by me.)

This author, though differing from the former, is not more favorable in his views to the use of plaster for the purpose suggested. The gypsum* must be in a state of solution to combine with ammonia. That is a mode in which it is never used, either with guano or manure. It is scattered over the heap of the latter, or mixed up with the former in a dry state, or at farthest, a merely moist state, when the affinity of the sulphuric acid for the lime with which it is combined, is much stronger than for ammonia. But is it possible for the combination to take place in the soil, the principles here stated being conceded to be true? They are mingled and interred together, but how long do they bear one another company in the tomb to which they are consigned? The volatile alkali is continually ascending and escaping from its prison house, until rain comes, and then it descends with perhaps equal rapidity. The gypsum lies inert in "cold obstruction," until it meets with five hundred times its own volume of water, when a solution takes place and it seeks a lower depth. Now, wo! unto the tiny gases of ammonia with which it comes in contact, for if Boussingault be true, they will be arrested forever, chained in their dark domain, with no chance of ever seeing the upper air, unless some hungry root seeking about for food should lap them into his stomach and digest them into the world above once more. But is it probable that many arrests of this kind will take place? Let it be recollected that while gypsum takes five hundred times its own volume of water for solution, ammonia only requires one six-hundred and seventieth of its volume. It is obvious they must move from their places at very different periods, and be governed by widely varying laws. What must be the prospect of contact with one bushe

* Plaster of Paris, gypsum and the sulphate lime are the same.

of three-quarters of a bushel of plaster diffused over an acre of land with so many adverse circumstances opposing? To produce any effect, according to our author, the union must occur while the gypsum is in solution.

In justice to our two authors, and that their apparent variance may not invalidate their authority, it should be stated that the affinities of substances, or their order of decomposition, are different under different circumstances. For example: when a stream of hydrogen gas is passed over a bar of oxide of iron, heated to redness, the iron is deprived of its oxygen and water is formed by the union of the hydrogen with the oxygen. It would seem from this experiment that oxygen had a stronger affinity for hydrogen than for iron. Yet, "when watery vapor is brought in contact with red hot metallic iron, the oxygen of the water quits the hydrogen and combines with the iron." From this last result it would appear that the reverse was true, and that iron had a more powerful affinity for oxygen than hydrogen possessed for oxygen. Modifying circumstances often change the results of affinity.

But let us suppose, in opposition to the principles of these chemists, that ammonia will decompose the sulphate of lime, both in a state of powder and solution, and that the muriate of ammonia, the oxalate, urate, phosphate and carbonate of ammonia, all found in guano, are decomposed, their respective acids set free, and the sulphate of ammonia formed in their stead; which would take place, were the sulphate of lime once separated, and these substances brought in contact. What a vast change would you have here? Would the guano be any longer the same substance? These various acids all liberated, and in pursuit of new combinations, the lime also on the hunt for some other mate, the organic matter subject to the action of all these substances, would there not be an upturning, a complete "*bouleversement*" of the guano? The sweet juice of the grape, by the introduction of a little air, forms so many changes, there is so much decomposition and composition, the must becomes wine; a substance as different as sugar is from the beet. It would seem that when such chemical action was once introduced into the guano as that above referred to, we would have cause to apprehend equal changes, but far less salutary.

Not that the value of sulphate of ammonia is to be doubted for a moment. This substance is certainly highly fertilizing. But the doubt is whether guano is the most economical and best material from which to make it. It would seem that it could be bought already prepared on much better terms.

It is now necessary to consider some authorities on the other side of this question. And first, we will introduce Baron Liebig as a chemist of the highest reputation, wielding an influence and enjoying a confidence in the world inferior to no man on questions pertaining to the chemistry of agriculture. He says "carbonate of ammonia and sulphate of lime (gypsum) cannot be brought together at common temperatures without mutual decomposition. The ammonia enters into combination with the sulphuric acid and the carbonic acid with the lime, forming compounds destitute of volatility and consequently of smell. Now, if we strew the floor of our stable, from time to time, with common gypsum, they will lose all their offensive smell, and none of the ammonia can be lost, but will be retained in a condition serviceable as manure.—*Mohr.*

It will be seen that Liebig quotes Mohr as his authority. It may be, and it is not improbable, that he relied exclusively on him, and made no experiments himself. No writer of a chemical treatise can possibly test all his statements himself, and if this be said merely on the authority of Mohr, it is much less to be relied on than if Baron Liebig had investigated the subject himself.

Apart from chemical authorities, the Hon. P. H. Pusey, M. P. states that he made the experiment here recommended; that he applied plaster on the floor of his stables and that the escape of ammonia was not arrested. Here is fact against theory; and the fact being true goes very far to prove that the theory must rest on some erroneous principle. Mr. Pusey further states that he strewed a bushel of plaster over a few square feet on the litter of a farmyard, from which he perceived that ammonia was escaping and yet the application did not arrest it.* This he tested "by holding near the surface a paper dipped in spirits of salt, which turns the invisible fugitive into a white opaque steam of sal ammonia."

Col. John Taylor, of Caroline, was in the habit of scattering plaster on the soil along with his manure, and ploughing them in together. Many other farmers have also used it with manure, and have testified to the beneficial effects of the application. There is no reason to doubt the good results; but might not the same consequences have been obtained by applying them separately? On some lands plaster exerts a magic influence with or without manure. The same query may well be suggested as to those reported successful experiments in mingling plaster and guano. If the plaster produced no chemical effect on the guano, it would certainly be an important auxiliary on those soils which are deficient in it, or to which it is adapted; but it would be equally salutary in its action alone as in combination.

In introducing the authority of Baron Liebig, we have placed him on the other side of this question. But this is only true as to the effect which ammonia exerts in decomposing sulphate of lime; and here he is in direct opposition to Turner and Boussingault. But his principle, if it be true, seems to be still more unfortunate for the advocates of mingling plaster and guano. According to the two former, there would be very little, if any chemi-

* See American Farmer, page 184, last volume.

cal action resulting from the mixture—it would be only useless. According to the latter, those consequences would result, of which a glimpse has been given—before, when tracing the effects that would ensue on the supposition that ammonia would under ordinary circumstances, decompose the sulphate of lime. In short, according to the two chemists, the mixture would be innocuous, but it would result from the principle of the latter that it would be destructive. What would be the end of the decomposition that would ensue, I am not prepared to say.

It is much to be desired that some of the learned chemists in our Colleges, with the aid of their laboratories, would give this subject a thorough analysis.

W. B.

December 26, 1851.

The subject of the following essay is a very important one, and we wish its author had made it longer. We invite him to renew it at his earliest leisure.

For the Southern Planter.

FENCING.

Mr. Editor,—In the last number of the Planter, I observe a communication over the signature of Mr. Walker Timberlake, on the proper construction of corn cribs, a very useful and valuable article, and one which will be of great benefit to your building subscribers. I hope Mr. T. will give us a description of his stable and pens for making manure. Information on the subject of farm buildings and fencing is of especial interest to the farmer; and the object of this communication is to furnish a few hints on the latter subject, which, I hope, may lessen this onerous tax among your subscribers. No man looks forward with any hope to any modification in the law of enclosures, and it is a matter of the greatest importance to land owners to lessen the labor and expense of keeping out neighboring stock, by consulting both economy and durability in the future construction of their enclosures.—My farm contains two long lanes of fencing, crossing each other at right angles, and furnishing a promenade for a large number of very *industrious and enterprising* cattle from a neighboring village. The large amount of fencing rendered necessary to keep up the fences along the public roads, leading through my farm, with the tax of keeping up cross fences, has turned my attention to the cheapest and best modes of enclosing lands; and I give below the result of my observations and enquiries on the subject:—Stone constitutes the best, and, in the end, the cheapest material for fencing where the hauling is from adjacent arable ground, which they encumber, or where there is no quarrying to be done, and the wall is constructed by the labor of the farm. But few farms furnish stone in sufficient quantities, and of the proper description, to enclose any large proportion of their arable surface; but it should be remembered, that if the farmer has it in his power to construct only one hundred yards of good stone wall, that much is done for him and his successor. Most of the highlands on the James river farms, contain great quantities of small, round stone, which, if properly used, would become a valuable fencing material. No wall constructed entirely of such stone, it matters not how broad the base, promises much durability; but a permanent enclosure may be made by inserting posts—say eight feet apart—along a row of such stone, piled to the height of three feet, and two planks nailed on the posts above it. It should, however, be observed that, along such fences all kinds of noxious briers and weeds seem to find a congenial home, and it is impossible to get at their roots to eradicate them, without removing the fence. Where but a moderate quantity of such stone is upon the soil, they should not be removed, as they contribute, by the moisture which they retain, to the productiveness of the land; and any surplus quantity of them can be more advantageously employed in constructing under drains than fences.

Next to stone, live fences are the most permanent, and when properly kept are highly ornamental. The plant best adapted to our soil, is the Osage orange, which can be obtained either from the seed, or in plants large enough to set out from the Northern nurseries.* The price of plants is about eight dollars per thousand, and of the seed, three dollars per quart. This plant grows luxuriantly on any strong clay or loamy soil, and forms a hedge so dense that nothing can penetrate it. For cross fences, yard, garden, or orchard enclosures, it is invaluable. The only hedge of this description that I am acquainted with, is a very perfect one on the farm of Doctor Thomas Massie, of Nelson county, who recommends it highly. I would advise any one designing to set out a hedge, to consult a very able article on the subject, in Stephens' "Book of the Farm." Of other enclosures—post and rail, with each rail inserted into a mortice in the post, makes an excellent fence; the construction of which, however, is tedious, and I much prefer a fence constructed of good locust posts and strips sawed one and a quarter inches thick, by four inches wide. Seven strips of these dimensions (which should be braced by a plank nailed upright on each panel, between the posts,) make a fence that will turn stock, and where the panels are sixteen feet long, require only thirty-seven feet of plank, running measure, to the panel, which is a great saving of timber over the common method of constructing plank

* And of as good quality from Gen. William H. Richardson, of Richmond, whose care and integrity we warrant to the few who may not know him personally or by character.

enclosures. A still farther saving of timber and labor may be accomplished by putting the fence on a bank, where, practicable, and it should be borne in mind, that, under such circumstances, it is not necessary to construct a fence as high as when made on level ground; yet among the very tallest fences I have ever seen, were some elevated on a bank, or running on the side of a hill!

The common worm, or rail fence, is the pride of Virginia, cherished, under all circumstances, by Cuffee, to whom it affords a fine supply of fuel, as well as by his master, and I shall say nothing in condemnation of it.—Where it is designed to make a permanent rail fence, on the line of division, for instance, the following is the best plan I have ever seen of constructing it:—A bed six feet wide is thrown up, along the proposed line of fencing, by a three horse plough; on this is laid the bottom course of rails, to form the base. Hands, with broad hoes, then get upon the bank, and pull the earth over the rails, thus changing the bed from a straight one, as formed by the plough, to a shape corresponding with the position of the rails, which have been previously laid down, to mark the course of the fence; upon this bank a fence is then constructed, staked and rided, and seven rails high. Stock are prevented from getting to this fence, to break it, by the embankment, and ditches which will be formed each side of the bank by subsequent rains, and, in all respects, it makes the best fence, for general use, where it is intended to be permanent, that I am acquainted with. I am admonished that my communication is getting as long as some of my fences; so I will defer to another opportunity a farther consideration of the subject.

M. C.

Nelson County, Virginia, Jan. 1, 1852.

For the Southern Planter.

THE FARMERS' CLUB OF NOTTOWAY.

Mr. Editor,—The Farmers' Club of Nottoway, at its last meeting, ordered that the following petition should be presented to the General Assembly of Virginia. A resolution at the same time was passed, ordering it to be sent on to the Southern Planter for publication, with the earnest request that all the clubs and societies in the State co-operate with it in the petition—if in favor of its object—and if not, that such club or society send one, in accordance with its wishes. It is also the request of the club, that farmers, and others interested, publish individually their views, pro or con.

The object of this resolution and request is to agitate the subject, and elicit information in relation to the wishes of the farmers in the eastern section of the State.

The club would also be under obligations to you, Mr. Editor, if you would, as you see proper, further an object deemed second to none other in importance, as it regards the prosperity of agriculture in eastern Virginia.

With respect, yours, truly,

RICHARD IRBY.

The Petition of the Farmers' Club of Nottoway County, to the Honorable the General Assembly of Virginia, now sitting:

Your petitioners, after a full and careful examination of the present system of enclosure in the eastern section of Virginia, beg leave, respectfully, to represent: That, in their opinion, it originated with the necessities of the earlier settlers of the State, under circumstances that rendered the law at that time both expedient and proper; but since the face of the country and our social and agricultural wants are now essentially, and, in many respects, radically changed, we deem the alteration of the system to be as strongly demanded as was its original institution. The farming interest, now that judicious improvements are opening new markets, as well as new and valuable sources for obtaining fertilizing agents, they believe, has but this great and oppressive impediment to shake off, to rise to a degree of prosperity, unprecedented in its previous history. This being the great and paramount interest on which every other mainly depends, your petitioners, for many reasons, regarded as both cogent, and, in fact, unanswerable, believe that your honorable body could render no more acceptable service to the community at large, than to grant their prayer, and substitute some system, better adapted to the present condition and requirements of the country, especially one prohibiting the roaming of stock at large.

RICHARD IRBY, *President.*

J. M. HURT, *Secretary.*

For the Southern Planter.

A PLAN FOR THE FORMATION OF AGRICULTURAL SOCIETIES;

WITH AN APPEAL TO THE FRIENDS OF AGRICULTURE IN VIRGINIA.

Mr. Editor,—No arguments are needed to prove the utility of agricultural societies and of cattle shows, when they are properly managed, and a spirit of emulation is excited in the community. Such a spirit may sometimes be spread over a limited space, and be so active as to manifest itself by the formation of a county society, and by a few annual exhibitions: and then, for want of adequate support, and sufficient rivalry, languish and expire.—Again, it may be equally strong in individuals sparsely scattered over an extensive region, and be active enough to show itself by similar means; but not having the sympathy of the community, it soon dies from want of concert,

want of mutual encouragement and want of pecuniary contributions to defray expenses, and to attract attendance from a distance, by adequate inducements. Could a history be obtained of the societies that have existed in our State, something like the above would probably be found to be the causes of their decline. If such be the case, we can only expect to erect *permanent* and *useful* ones, by arousing the *people* of *large* districts to concentrated action, by diffusing a feeling of emulation and improvement among the *whole* of them. And how is this to be effected? It is feared that individual exertion would be in vain.—The memory of the past is too discouraging for many to attempt it with heartiness and determination. The following plan, then, which calls in aid the permanency and the resources of the State government, is respectfully submitted for consideration to the farmers of Virginia. If they approve it, and will act, it will succeed; if they are indifferent, it will fail.

It is proposed that they shall influence the next Legislature, either before or after its election, to pass a law enacting,

1st. That whenever a society shall be formed in any Congressional District of this State, it shall be authorized to draw from the treasury, every two years, a sum equal to its contributions, provided, it does not exceed one thousand dollars. The whole to be used for the encouragement of agriculture and the manufacturing and mechanic arts within such District, by prizes and otherwise; *e. g.* the employment of a chemist and geologist, for a year or more, to analyze the soils and investigate the mineral resources of that District, beside delivering lectures. It shall be incumbent upon such Society to make reports of its transactions to a Central or State Society, when one shall be organized, as follows, viz:

2d. That whenever a majority of the Districts shall have organized their societies, the members thereof may constitute a State Society, which shall be authorized to draw one thousand dollars, every two years, from the Treasury, to be used, with the funds below, for the purposes mentioned in 1st section—and each District may, of right, contend for premiums at its fair, provided, its own Society shall have contributed three hundred dollars for that exhibition; but no article, viz: essay, animal, implement, &c. shall compete, without having previously taken a District prize, or, unless it be imported into the State, or invented subsequently to the last fair held in its District. The State Cattle Show and Fair shall be held in alternate years with those of the other Societies—and also, at some convenient place, alternately east and west of the Blue Ridge. It shall also be incumbent upon this Society to furnish to the Legislature, for publication, a report of its transactions, with a compendious synopsis of the District transactions.

The above is a brief outline of the plan—the organization and details of which could be readily supplied—and be perfected by practical experience. The Congressional Districts have been assumed, as probably most nearly equalizing the agricultural interests of the State.

This scheme is very similar to one that has been in successful operation, with beneficial results, for several years, in New York. The chief differences being in the provision for District instead of County Societies—the provision that none but prize articles shall contend before the State Society, and the provision for biennial instead of annual fairs.

The District system would be better with us, because the comparative paucity of our population and the smallness of our counties would afford but little competition; and from their great number, the quota of means that could be supplied to, and by each, would scarcely sustain a Society at all—whereas, in Districts the reverse of this would hold—the means would be ample to command a noble fair, and to bring together a great assemblage by arousing emulation to a higher degree in individuals, and by exciting in the counties a healthful rivalry to bear away the honors of the District.

These feelings would be farther augmented, and the interest in, and importance of these fairs would be still farther increased by the provision, allowing only their prize articles to be exhibited for competition in the great fairs of the State, since each District would have to prepare in the former to contend for the highest agricultural honors of the Commonwealth, as awarded by the latter. What a laudable ambition and generous contest for pre-eminence would thus be excited in individuals, counties and districts throughout our broad land! And who can estimate the advantages thence resulting?

The biennial system, too, is preferred, because, with the same means the exhibitions may be made doubly interesting and attractive; nor are two years too long a time to prepare worthily for such a fair as Virginia ought to desire. Freshness and originality might then be expected, instead of annual editions of the same show, with but small additions and slight improvements. But, in fact, an annual anticipation and gratification would not be wanting. These would be supplied by the State Fair alternating with the others, and furnishing the inviting spectacle of all the prize animals, &c. in the entire Commonwealth assembled at one point, after a year's training, to contend for honors and prizes, worthy of a great State and a great cause.

Is this scheme premature? Not if every influential farmer—*if every subscriber to this paper*—will act in the premises, and that without any farther appeal in person or by letter. At least, let the Legislature try the sense of their constituents on this subject, by passing a provisional law, as above. If it be premature, it will remain inoperative, by their inaction. But, from the spirit of improvement we

have heard of, as being abroad, and from the practical improvement many of us have seen, there can be no doubt that every District would gladly avail itself of such preferred advantages.

As the next Legislature will be the first to assemble under the new Constitution, may it signalize itself by the enactment of a law for the promotion of the greatest and best interests of the State, viz: agriculture, with its attendant aids, the manufacturing and mechanic arts—nor is commerce forgotten, for as these increase, that must grow; and as another Legislature will not assemble for two years, may the friends of these great interests exert themselves in time, and with an energy and perseverance not to be resisted.

"ANON."

November 19, 1851.

For the Southern Planter.

SOUP.

Mr. Editor,—Of all the dishes served at our tables, soup is the most economical, the most wholesome, and ought to be the most palatable, and yet to see the little care bestowed upon it, one would suppose it either positively deleterious or wholly innutritious. "Why," says one of your lady readers, "I never trouble myself about soups, because none of my family like them." And are you quite sure, my dear madam, that they have ever tasted soup? for, pardon my bluntness, the tureen of lukewarm, greasy stuff, black with pepper and reeking with cabbage and onion, which your cook daily serves up to them under that name, is little better than a very happy imitation of dish-water. Truly you tax their politeness too far if you do not expect them to commit that terrible breach of good manners, "decline soup."

With the French, who of all people in the world understand best the gastronomic, and what is quite as much to our purpose, the economic, art, soup is ever a prelude to dinner. And from the pauper, who pays his *sous* for one dip of the iron spoon with his chance for one of the bits of meat floating in the immense caldron, to the would-be emperor, I doubt whether a man in France ever willingly takes his dinner without his soup, margre or vegetable.

That it is wholesome, all will allow; that it is economical, is equally true; for the bony shin, and even the tail of the ox, so often thrown away as worthless, are, from the quantity of gelatine they contain, particularly adapted to soup-making; and I have eaten most delicious soup made from the carcass of a turkey which had dined a family consisting of three grown persons and two children for three days. And that it is palatable, I think you will agree, if you follow the accompanying excellent directions taken from a newspaper. In addition to these, I will, with your permission, send you, from time to time, such recipes for soups as I may deem acceptable to the readers of the Planter.

W.

"MAKING SOUPS.—The delicate and proper blending of savors is the chief art of good soup making. Be sure and skim the grease off the soup when it first boils, or it will not become clear. Throw in a little salt to bring up the scum. Remove all the grease. Be sure and simmer softly, and never let a soup boil hard. Put the meat into cold water, and let it grow warm slowly. This dissolves the gelatine, allows the albumen to disengage and the scum to rise, and diffuses the savory part of the meat. But if the soup is over a hot fire the albumen coagulates and hardens the meat, prevents the water from penetrating, and the savory part from disengaging itself. Thus the broth will be without flavor, and the meat tough.

"Allow two table-spoonfuls of salt to four quarts of soup, where there are many vegetables, and one and a half, where there are few. Be sure not to leave any fat floating on the surface. A quart of water, or a little less, to a pound of meat, is a good rule. Soup made of uncooked meat is as good the second day, if heated to the boiling point. If more water is needed, use boiling hot water, as cold or lukewarm spoils the soup. It is thought that potato water is unhealthy, and, therefore, do not boil potatoes in soup, but boil elsewhere, and add them when nearly cooked. The water in which poultry or fresh meat is boiling should be saved for gravies or soup the next day. If you do not need it, give it to the poor. Keep the vessel tight in which you boil soup, that the flavor be not lost. Never leave soup in metal pots, as sometimes a family is thus poisoned. Thickened soups require more seasoning, nearly double the quantity used for thin soups."

NUMBER OF FARMS IN THIRTEEN STATES.—The following census statistics, showing the number of farms in the States enumerated, will be read with interest by the farming community:

New York,	174,234
Pennsylvania,	127,733
Ohio,	146,821
Indiana,	101,973
Virginia,	76,704
Illinois,	71,062
Kentucky,	77,290
Maryland,	21,950
New Jersey,	24,504
Delaware,	6,225
Michigan,	34,690
Wisconsin,	22,062
Iowa,	15,500

From the Boston Journal of Agriculture.

AGRICULTURAL EDUCATION.

The phrase "practical man" has been allowed to express simply "one who works with his hands"—a hand-laborer at any calling; and this definition has been the bar to a good understanding between adverse parties on many questions. If the usual definition—the one given above—be the true one, then in a lawyer's office the copying clerk is the practical lawyer, instead of the lazy old hunks who do nothing but read books, and afterwards talk to the judge;—the practical sailor is he who is stretched on the yard-arm furling sail in a storm, and not the quarter-deck loafer, who merely gives orders;—the practical machinist is not that thoughtful, anxious looking student, who watches a score of workmen, while they file, and turn, and hammer the iron and brass under his direction, to complete that wonder of the world—a steam engine; to be "a practical man," he should be at work with his hands, and if his face is smutted with the soot of the forge, and iron filings set in sweat, he is a little nearer the definition. And by this same definition, the sturdy Irishman who holds that plough, is the practical farmer, in preference to the scientific individual who is insisting against him, that three inches is not the best, though the easiest depth to which the soil should be disturbed.

We have gone thus at some length, in this and a previous article, to demolish this definition of "a practical farmer," because it has so often done duty as "a Cock-Lane Ghost," in agricultural meetings, to scare the trembling "Book Farmers," who "could n't begin to mow a swarth with our Sam, he'd give 'em a sweater, the whole posse of them; president, secretaries, and all." Let an individual with any appearance of science about him,—say a black dress coat,—announce at a meeting that his experiments (these are heretical practices, by the way,) have convinced him that from sixty to eighty per cent. of the ordinary farm-yard manure is mere water, and that in consequence from three to four-fifths of the labor and strength expended in hauling it to the fields is positively labor and strength wasted,—let him dare to announce so strictly correct a statement as this, and instantly some hobby-riding individual, who finds it easier to join the clamor against science, than to stem the tide of prejudice,—instantly he crams down the throat of the daring experimenter "a dozen practical farmers in my neighborhood who have worked a farm, man and boy, for forty years." What can the book-worm say? Here are four hundred and eighty combined years of practical experience opposed to him, and they agree that he knows nothing about it! Why, he is necessarily choked by the "dozen practical farmers."

Now, readers of this journal, and farmers of New England, having endeavored to demonstrate who are not entitled to monopolize the honorable name of "practical farmers," we will proceed to show who have a claim to it. A Practical Farmer, in our view of the case, is one who reduces the Science of farming to actual use. This knowledge he must possess, and we do not care a copper whether he reduces it to actual use by the agency of his own hands, or those of hired laborers, so long as he knows, and can show others what is to be done, and how it is to be done. We will even go one step further, and agree with Hon. Mr. Brooks, of Princeton, who declared that he "could farm it the best from the top of a stone wall." The old adage is a good one—that "the owner's eye is worth more than his hands." The only exception that now occurs to us, is in the case of a large field of grass or grain, when it happens, as it rarely does, that the owner is the best mower or cradler on his farm; he can then to advantage lead the gang. But in almost every other operation of a large farm, while the farmer is sweating like a bull at one extremity of the farm, his more prudent "hands" are lying under the shade of a tree; or discussing interesting topics in the corn-field, with a halt every three minutes to gesticulate and to lay down the law on their side a little stronger. This is no fancy sketch. Every farmer knows how great a difference it makes, with the best help he can hire, whether he himself is in sight or out of sight.

We are assured, then, that in farming, (on a large farm, of course,) as in every other business, where we are obliged to employ the labor of others, as in a mill or a machine shop, it pays to superintend the hands employed, and to see that their labor is rightly divided, and that no working time is idled away. If this be admitted, as we think it must be, the last rag is removed from the bugbear which has so cruelly frightened us, and it stands exposed—a subtle fiction—a broom handle and a pumpkin-head ghost. The hand as rough as a nutmeg-grater, and the pantaloons of the last century, cut in scorn of fashion, are not necessarily the uniform of the practical farmer.

It may be thought that we are taking much trouble to little purpose, in proving who are, and who are not practical farmers. But let any one attend an agricultural meeting in any State of the Union, and attempt to laud science, and he will soon find with what staggering force "a practical farmer" is flung at his head.

The opposing parties have both set up their standard of a practical farmer; the one claims it to be the hearty and honest, but prejudiced and obstinate character, now almost obsolete, who will do as his father did before him, and desires his own sons to continue the course after him, because old folks have experience, and ought to know. This old gentleman shuts his eyes to the light which science is pouring upon agriculture; he ridicules, without examination, the improvements which are made in his agricultural implements, and they are

sweepingly condemned under the terrible name of "new-fangled notions." This is the tough old codger who is chucked into your teeth at agricultural meetings, and busy men must they be who bring him forward on these occasions, for through the length and breadth of New England, there are not a score alive. It is a figure of the past, brought forward to frighten the present. While on the other hand, the really practical farmers are those who are sought to be intimidated by this phantom; they are the active men of every neighborhood—they are the men who are not ashamed to learn what others have done, even if forced to obtain this information from a book; they are the men who believe that the nineteenth century finds the world more advanced in useful knowledge than did its predecessor, and who are determined to hand it over to the twentieth, the wiser for their having lived in it. These are the men who, rightly appreciating knowledge, are determined that their sons shall possess it; and they demand that a suitable provision shall be made by the State, to supply those branches of education required in their calling. We will see who dare deny them.

INFLUENCE OF GYPSUM ON VEGETATION.

BY M. C. MENE.

Ever since Franklin's great experiment, gypsum, or sulphate of lime, has generally been considered as possessing much fertilizing power, and as being of great importance in agriculture. Having paid some attention to this substance, I make known my results, in the hope that they may be found of value to the public.

1. I filled two zinc boxes with pure sulphate of lime obtained from the double decomposition of sulphate of soda and chloride of calcium; in one of these boxes I sowed some grass seeds, in the other some wheat. The two boxes were then placed under glass shades, in order that all external influences might be avoided: the seeds were watered every other day. At the end of a few weeks plants had come up green and healthy, as in common soil; but as they developed, their fine appearance diminished, and at the end of a fortnight they look dried and withered.

2. In boxes similar to the first, I placed a mixture of equal quantities of pure sulphate of lime, obtained as before, and clay, and sowed the same seeds as in the last experiment; the plants came up but not nearly so well as in an unartificial soil, and they did not ripen.

3. In boxes, and under circumstances the same as before, I sowed the same seeds on dung covered over with a layer of sulphate of lime three-tenths of an inch deep. At the end of a fortnight the plants had come up and grown wonderfully; they ripened well and were magnificent specimens.

These facts, though of considerable practical importance, would not have shown in what way sulphate of lime really acts, had it not been for the following accident:

I happening to have a glass of muriatic acid in my hand one day, when looking at box No. 3, I accidentally spilt some of the acid on one of the boxes, and to my great suprise the lime effervesced, and on further examination I was satisfied that the sulphate had become changed into carbonate of lime. I conclude from this fact that the carbonate of ammonia, given off by the decomposition of the dung, being volatilized by the heat of the sun, came in contact with the sulphate of lime, when double decomposition ensued. [Forming carbonate of lime and sulphate of ammonia.]

To ascertain how far this was true, I got some zinc pots, with bottoms pierced like a sieve; in the pots I placed some dung, then some sulphate of lime, and then I sowed some grass seeds.

When the plants had appeared and become tolerably developed, I watered them abundantly for a quarter of an hour, and in the liquid which flowed from the bottom of the pots I found sulphate of ammonia, whilst on the surface of the pots there was evidently carbonate of lime. This confirmed the view I had adopted.

I then made other experiments, which do not, however, bear upon the last mentioned facts. For example, I watered grass seeds sown in manure, in pots with pierced bottoms, with water containing one of the following substances, viz: sulphuric acid, muriatic acid, nitric acid, acetic acid, sulphate of iron, sulphate of potash, chloride of manganese, phosphate of soda, sulphate of magnesia, nitrate of soda.

With all these substances the grass grew well, and from the bottoms of the pots I obtained salts of ammonia, which are not volatile at the ordinary temperature. From all these facts I think we may conclude.—

1. That gypsum has by itself no fertilizing power, and is alone useless as a manure.

2. That gypsum only is useful in agriculture when mixed with substances containing ammonia; in which case there is a double decomposition, and the ammonia is stored up for the use of the plants.

3. That for gypsum may be substituted any other salt which will fix ammonia, and render it not volatile at the ordinary temperature.

It is my intention next year to repeat these experiments on a large scale, in order to ascertain their real practical value.

COMPTES RENDUS.

While a man liveth he may mend; count not thy brother reprobate.

From the Gardeners' Chronicle.

PHILOSOPHY OF MANURES.

It is an excellent custom in certain foreign countries, and one which leads to very valuable results, to send from time to time scientific men to travel in the various neighboring kingdoms; they are sent with a specific object, they carefully investigate the matter to which their attention is directed, and on their return, they make a report to the government who sent them, embodying the facts which they have collected in their travels, and the conclusions at which they have arrived; these reports, which are generally drawn up by men eminently well qualified for the task, often present better and more impartial views of the particular manufactures of the kingdoms so visited, than could possibly be prepared by any one residing in them. There is a good illustration of the truth of this, in the skilful reports lately drawn up by M. Payen, by desire of the Minister of Agriculture and Commerce of France, on drainage, the use of peat, and the employment of artificial manures in England.—These reports, written by an excellent observer, one who is intimately acquainted with all the various departments of scientific agriculture, and the economy of vegetation in general, are of the highest interest and importance.

If, however, a stranger visiting England for such a specific purpose comes with the advantage of an unprejudiced and unbiassed judgment, he has, at the same time, the disadvantage that he does not always know in how far he may safely rely on the statements which are made to him, and he therefore runs considerable risk of being misled by false or erroneous information. The conclusion which M. Payen appears to have arrived at, from a very careful study of the present state of the manufacture of artificial manure in England, and of the results of numerous experiments on the practical application of those manures, might probably be expressed as follows: A dozen years ago it was stated by Liebig and his followers that the great object of all artificial manures was to supply certain inorganic matters to growing plants. It was asserted that soils became exhausted from the abstraction of potash, phosphoric acid, and soluble silica, and it was, therefore, said that manures were chiefly valuable in proportion to the quantity of those substances which they contained. The experience of the last few years has, however, shown that this is not really the case, for the most careful and satisfactory experiments have proved, that soils are very seldom wanting in the inorganic elements of plants, such as phosphoric acid and alkalies; but that they are often deficient in nitrogen, in a state capable of being assimilated by plants. In other words, that ammonia and nitric acid are far more important components of manure than phosphoric acid or alkalies.

That Liebig did, at one time, attribute very great importance to the earthy and alkaline parts of manure, no one will deny: and, indeed it is evidently proved, by the fact that he even became the originator of a patent mineral manure, which, as Payen remarks, has for the most part been found of comparatively little real value. If, however, it is acknowledged on the one hand, that the value of these inorganic manures has been overrated, it must, however, at the same time be admitted that there are circumstances under which they produce very remarkable effects; and that even though it is proved that they are not the only things necessary to the growth of plants, or the only things which the cultivator has to add to the soil, it does not, therefore, follow that they are of no value at all; and we ought to take care that in acknowledging our error, we do not fall into the opposite extreme.

It has been all along known, that the very best manures were those which contained a mixture of organic and inorganic matters; substances such as common farmyard manure, consisting of decomposed and decomposing animal and vegetable materials, intimately mixed together. The error which has been committed consisted in the attempt to compare perfectly different and opposite things; and to decide which of the two was the most important. The alkalies and phosphoric acid are, no doubt, quite essential to the growth and well-being of plants; but so also are ammonia, nitric acid, and the various other sources of nitrogen. To attempt to compare the kinds of food is pretty much as though we were to try and compare together meat and bread, as articles of animal food; both are valuable, and the two taken together are more valuable than either taken alone. So it is with plants; it is of no use attempting to determine whether ammonia or alkaline phosphates are the most important, as constituents of manure; they serve very different objects in the nutrition of plants, and when the

one is required, it is certainly idle to attempt to supply its place by giving more of the other.

There are a number of curious experiments which have at times been quoted, as proving that the organic part of common yard manure is of no value; and that its virtue consists entirely in the inorganic salts which it contains. Thus, for example, it has been stated, that on manuring two equal pieces of ground, the one with a certain weight of good farm-yard manure, and the other with the ashes of an equal quantity of the same manure, no difference could be subsequently observed between the crops raised on the two fields. The truth of this, again, has been called in question by other experiments, the results of which were just the reverse; and those who attempted to draw general conclusions from the two experiments, were at last fairly puzzled how to reconcile two apparently diametrically opposite statements. The real cause of the difficulty, however, was simple enough; it arose merely from the attempt to compare together dissimilar things, which, from their very nature, could not fairly be contrasted with one another. If we admit that which is now pretty well generally acknowledged, namely, that all plants, in addition to certain other substances, require both ammonia and also alkaline phosphates, it is very easy to perceive, not only that a manure containing both these substances must be generally valuable, and therefore more certain in its effects, than a manure which contains only one or the other; but also that such a manure would act in a very different manner on different soils, and applied to different plants. For example, good farm-yard manure, applied to a soil rich in earthy phosphates, and abounding in bone earth, will, nevertheless, be found to do good and cause the plants cultivated in it to grow with increased vigor and luxuriance; not because of the phosphoric acid which it contains, but chiefly from the presence of a certain quantity of ammonia, nitric acid, and matters capable of yielding those substances by their putrefaction.—Nevertheless, the same manure applied to a soil containing no phosphoric acid, but artificially supplied with salts of ammonia, will also be found to act beneficially; in this case it is not the ammonia, but the phosphoric acid of the manure, which is of importance. Or, if in place of applying a mixed manure, such as we have imagined, to these two soils, we were to take simple chemical manures—say phosphate of lime and sulphate of ammonia, we should probably find, that upon the one soil the phosphoric salt was the best manure, whilst upon the other the salt of ammonia would produce the best effect. It is plain, then, that the value of these different elements of manure must depend on the wants of the plant, and on the capabilities of the soil.

In concluding his report, M. Payen well observes, that there is one thing wanting which would be a very great aid to the cultivator, and that is, that all artificial manures should be designated by plain and simple names, expressing their real nature, and that their exact chemical composition should be honestly stated, as their purchasers would be no longer deceived by mysterious names, or misled by vexatious uncertainty as to the real value of the manures they buy. On this point there can be no doubt as to the evil, though the remedy may not be quite so clear. Perhaps the best advice which can be given is this—buy only of respectable dealers, and do not be deceived by cheap manures: if you are tempted by what is termed a bargain, you are pretty sure to suffer in the end; good manure is well worth its fair market value; the trash which dishonest dealers sell you is often not worth having as a gift.

"There is nothing," said Sir Sam'l Romilly, "by which I have through life more profited than by the just observation, the good opinion, and the sincere and gentle encouragement of an amiable and sensible woman."

From the Cultivator.

SUGGESTIONS FOR EXPERIMENTS

TO DETERMINE THE MODE OF ACTION AND VALUE OF GYPSUM AS A MANURE.

Messrs. Editors,—Few substances used as manure have produced more widely different results than gypsum, or have given rise to more numerous and discordant attempts to explain their mode of action.

In some districts, farmers have derived little or no benefit from its use; in others it has proved highly beneficial to a certain class of plants—while in others again, it seems to have been applied to almost all crops with advantage. If it is a difficult matter to arrive at any satisfactory general conclusion regarding the action of gypsum on plants, from a study of facts recorded

by practical men, the inquiry becomes much more perplexing when we consider the explanations which have been advanced by chemists and others, with a view to account for the eccentricity of the action of this manure. Some have supposed that gypsum does not, of itself, afford food to plants, but that its fertilizing power depends upon the influence which it is said to exercise on other substances; that it merely improves the physical properties of the soil—that it hastens the decay of organic matter—that it fixes ammonia which would otherwise be dissipated in the air. Others contend that some one of its constituents is the sole active agent,—water, sulphur and lime, having each their advocates. While by others, gypsum is considered to be an essential constituent of some plants, without which they cannot grow in a healthy condition.

The experiments and observations which have hitherto been made, do not seem to have been sufficiently extensive or accurate, to enable any one to point out with certainty, the means by which gypsum contributes to the growth of different plants, nor to which plants, on which soils, or in what manner, it can be applied with the greatest advantage. Our knowledge on these important points being so unsatisfactory, I have thought it may be well to invite the attention of the readers of the Cultivator to the subject, in order that they may see that the inquiry is an interesting one, and likely to afford useful results, and that it stands much in need of, and well deserves a more extended chemical and practical investigation.

The least plausible of the hypothesis mentioned, seem to be those which ascribe the action of gypsum to its supposed power of decomposing organic matter, altering the physical constitution of the soil, or of affording water to plants.

Sir Humphrey Davy and others, have proved that the decay of animal substances was not hastened by being mixed with gypsum; if it had possessed this property, and by this alone, it was useful to plants, then it should prove most efficient on soils rich in organic matter, and add to the luxuriance of *all* plants.

The quantity usually applied, from two cwt. to four cwt. per acre, is obviously too small to exercise much influence on the physical constitution of a soil; besides its beneficial effects have been observed on soils varying in texture from sand to clay.

Vegetable mould, clay and other substances in the soil, are known to have a much greater capacity for absorbing moisture from the air than gypsum. In two cwt. unburned, about forty-seven lbs. only of water are added to the soil, and supposing roots had the power of abstracting the water of combination, and that this could be continually replaced, then if the supply of moisture afforded by gypsum was the chief cause of its influence, its effects should be most observable on the driest soils, and it should be of great benefit to all crops on most soils in dry seasons; but the facts at present known do not warrant any such conclusion. A crop has been doubled by the use of gypsum, on the western coast of Scotland, where much rain falls, as well as on the sands of Holkham, in Norfolk, where the climate is comparatively dry.

Liebig has stated that the influence of gypsum on the growth of grasses, depends on its fixing in the soil the ammonia of the atmosphere. There can be no question that gypsum has the power of fixing ammonia, or that the sulphate of ammonia produced by the mutual decomposition of gypsum and carbonate of ammonia, is readily soluble in water, and a valuable food for plants. Before, however, it can be admitted that this is the sole, or even the chief cause of its influence, it should be proved to have the most decided effect on soils which contain least of other matters capable of combining with or condensing ammonia, and that on these soils, a dressing of charcoal, or chloride of calcium, or substances containing ammonia, are equally efficient.

Sir Robert Kane considered that the peculiar action of gypsum consists in its supplying lime for the rapid growth of clover and other leguminous plants, which its moderate solubility in water enabled it to effect better than any other compound of that earth. It is probable that gypsum may, in some cases, act chiefly by means of its lime, when sulphuric acid and an abundance of other matters required for the growth of plants, excepting lime, are present in the soil. But it seems somewhat paradoxical, that the rapidity of the growth of a plant should be in proportion to the slowness of the supply of one of its chief constituents. If lime, in the state in which it is usually applied, were so easily soluble as to be washed out of the land, or beyond the reach of the roots, before the plants had completed their growth, then a compound affording a more lasting, though limited, supply of lime, might in the end prove

more useful; but a dressing of ordinary lime is seen not only to carry through one crop, but to exercise an influence on crops for years after; and if the action of gypsum depended solely upon its lime, then it should follow that it would be an useless application to calcareous soils, where this material already abounds. The reverse of this, however, seems to be the case, for some of the most decided instances of the beneficial action of gypsum, have been observed in chalk. In "British Husbandry," it is said "experience has prove gypsum to be beneficial when laid upon limestone soils, or upon land which had been dressed with chalk or lime. It is used extensively for clover, sainfoin, &c. on the chalk formations in Kent, Hampshire and Berkshire. At Tanstall, near Sittingbourne, in Kent, situated, I believe, upon the chalk, a portion of clover was dressed with gypsum, at the rate of four cwt. per acre, and the aggregate produce was three times as great as the other portion of the field, to which no gypsum was applied. It can hardly be conceded, then, that the lime supplied by gypsum is the sole or main cause of its fertilizing power.

Sir Humphrey Davy concluded that gypsum is an essential constituent of some plants, as it was always most beneficial to those which afforded it on analysis, and he considered that it might naturally exist in some soils in quantities sufficient for the wants of plants; consequently a special application of gypsum to these soils, would be attended with little or no benefit. Other writers, as Russel, Johnson, &c. coincide in the opinion of Sir Humphrey Davy that the benefit to be derived from an application of gypsum, will not only depend upon the kind of plant, but on the abundance or scarcity of gypsum or sulphates in the soil. That sulphur contributes to the growth of plants, seems to be proved by the fact that sulphuric acid alone has in many instances proved beneficial. Vegetation has been observed to be luxuriant in the neighborhood of sulphurous springs. Natural or artificial waters which have a sulphurous taste, are said to give birth to a peculiarly luxuriant vegetation when they are employed in the irrigation of meadows. (Johnston.) In France, sulphuric acid has proved to be a good manure when poured upon land after the removal of the crop. (Liebig.) Sulphur has been applied with advantage in Germany, as a top-dressing for clover and other crops, to which gypsum, in that country, is usually applied. (Cuthbert Johnson.) In experiments made on two fields by a Scotch farmer, sulphuric acid afforded a greater increase of hay than gypsum, and an excellent crop of turnips has been raised by means of sulphuric acid in Fifeshire.

Again, the experience of farmers generally favors the conclusion that gypsum acts most energetically on sainfoin, clover, lucerne and turnips, all of which contain a considerable proportion of sulphate of lime. Thus at Holkham, an application of four bushels per acre on sainfoin layers, is said to have doubled the crop. On a clayey soil in Hampshire, two and a half cwt. per acre were strewn on two year old sainfoin; the extra produce of hay at the first cutting was one ton per acre; in October the gypsumed part afforded one and a quarter tons of hay, yet there was scarcely any on the rest of the land. In the next year the former was twice mown, while in the latter, it is said there was nothing to mow. On clover the influence of gypsum seems in some instances to be very decided. In an experiment made at Highstead, the simple soil produced one ton of clover hay and twenty pounds of seed per acre; a portion of the same soil to which gypsum, at the rate of five bushels per acre, had been applied, yielded a crop equivalent to three tons of hay and one hundred and five pounds of seed per acre. In British Husbandry, gypsum is said to have increased crops of clover and lucerne, on some soils in Kent, at least three fold. In Ayrshire, part of a crop of turnips was nearly doubled by the use of gypsum. In the same neighborhood, no perceptible effect was produced on turnips by two cwt. of gypsum; but the entire crop was excellent—a circumstance which should not be lost sight of when experimenting with special manures. There is a limit to the growth of plants; if a soil is already so rich in vegetable food as to be able to produce a great crop, a dressing of any manure to a soil in such a state, would be useless.

There are also many observations on record which seem to show that the growth of plants in some instances was checked, owing to the want of gypsum in the soil, and that it acts much more powerfully on some plants than on others. Thus, if land is clover-sick; if the plants spring up and die away as summer advances, this is considered by many to be an indication of the absence of gypsum. A crop of sainfoin which began to decline in the fourth year, became as productive as before by an application of

gypsum. (Brit. Hus.) In the fifth year after sowing lucerne, the natural grasses appeared to be gaining ground, when a dressing of gypsum produced such a smothering crop that the grass could no longer make head, till after the third cutting. In another instance, an old grass field became gradually less and less productive in spite of all applications, when a quantity of peat ashes containing about two cwt. of gypsum, was afterwards applied, and a similar result followed,—the grass not only grew with greatly increased vigor, but a quantity of white clover made its appearance in the part dressed, in so marked a manner as to attract the notice of the farmer. In both these cases the gypsum had evidently a much more powerful effect on the clover and lucerne than on the grass.

So far, then, as my gleaning of facts and opinions extends, it seems to me that all we can be said to know with any degree of certainty regarding the action of gypsum on plants is, that it does not depend upon the moisture it contains, or is capable of attracting from the atmosphere; nor on its supposed power of decomposing organic matter. We may also infer that it is most beneficial to clover and other leguminous plants, and that it probably acts more powerfully on them in consequence of the great proportion of sulphur they contain. If this be so, it is easy to understand why in some soils it may add to the growth of most plants. If a soil contains all other substances required for the perfect nourishment of plants excepting sulphur, then a dressing of gypsum would have a visible effect on wheat, oats, &c. which require a comparatively small supply; and it should follow that if the quantity naturally existing in a soil were so small as not to suffice for the wants of these plants, that clover, lucerne or sainfoin, which contain much sulphur, could not, previously to the application of gypsum, grow in a healthy condition. A difficulty, however, arises here; if this were the case, if the exhaustion of the sulphur of a soil, were the only reason why gypsum is so beneficial on some soils, why clover and turnips cannot be repeated at short intervals with advantage; why do not these soils produce a similar effect on the potato and cabbage, for the analysis of the ashes of these plants indicate that they require a very considerable quantity of sulphuric acid? yet there are few or no districts where the potato, at least, is not frequently repeated on the same land, but we do not hear of lands being tired of potatoes or potato-sick.

The points on which more precise information seem to be required are the following:

1. Does analysis show a deficiency of sulphate of lime in soils where an application of gypsum is efficient, and an abundance in those soils in which it is inert?

2. Is gypsum on all soils beneficial to plants in proportion to the smallness of the quantity of sulphate of lime they contain?

3. Does gypsum act by different means in different soils and on different plants?

If it should be ultimately proved that the action of gypsum is chiefly due to the sulphuric acid which it contains, then a question will arise, whether other sulphates or sulphuric acid, can be profitably substituted for gypsum on some soils or for some plants, as dilute sulphuric acid on chalk and limestone soils, or sulphate of potash for wheat, on land with sufficient lime. It would also be desirable to ascertain what are the chief causes of the difference in the quantity of sulphuric acid in the soils—whether it is to be traced to a difference in the composition of different rocks from which soils have been derived, and consequently whether a knowledge of the geology of a district will enable one, without the aid of analysis or experiment, to pronounce whether an application of gypsum will be profitable or otherwise. Or, may the difference depend partly upon the mode of cropping pursued in different districts; to the presence or otherwise of sulphurous springs; or is gypsum conveyed to the land in unequal quantities in different localities in the ordinary dressings of lime?

The following experiments seem likely to throw some light on the main questions. I propose that they should be tried in at least three districts. 1. Where gypsum is known to be of the greatest benefit. 2. Where it acts on certain plants only, as clover. 3. Where it is of little or no use to any plants. A field should be selected in each district, well drained, nearly level, of uniform quality, free from the shade of trees, and which had been manured and cropped throughout alike, for three or four preceding years. A complete analysis must be made of the soil of each field, previously to the commencement of the experiments. The same variety of each plant should be grown in the three districts; it is desirable, indeed, that all should be supplied from the same sample. The culture of each plant must be alike throughout; all kept free from weeds;

the land accurately measured and the entire produce of each patch carefully weighed. Notes should also be taken daily, of the weather during the trial of these experiments—and, as will be seen hereafter, it is especially desirable that the time the gypsum remains on the leaves should be carefully observed. I propose that a patch of most of our arable plants should be grown and top-dressed alike—say in the first week of June, with the following substances:

1. Clover.	Lime.
2. Wheat.	Gypsum.
3. Oats.	Sulphate of Soda.
4. Beans.	Carbonate of Soda.
5. Peas.	Nothing.
6. Carrots.	Carbonate of Ammonia
7. Potatoes.	Sulphate of Ammonia
8. Mangel Wurzel.	Sulphuric Acid.
9. Corn.	Nothing.
10. Ruta-Baga.	Gypsum.
11. Turnips.	Charcoal.

The burned lime used, should be slaked by exposure to the air; when reduced to powder, it will be partly in the state of hydrate and partly of carbonate of lime; as carbonic acid, sufficient for the wants of plants, exists in the soil and air, I propose that carbonates of lime, soda and ammonia, should be tried with the sulphates, with a view to determine how much of the extra growth of the plants is due to the action of these substances, and how much to the sulphuric acid. By a comparison of the produce of the different patches of any one plant, we may be enabled to conclude whether gypsum acts chiefly by means of its lime, its sulphuric acid, or its power of fixing ammonia.

A comparison of the produce of all the plants will indicate whether gypsum acts differently on different plants, growing under the same circumstances, and whether it is probable that other substances may be used with greater profit than gypsum, in certain localities. The advice of a professional chemist would be required as to the quantities of these substances to be used, and how they should be applied; it will be necessary, I apprehend, to consider what quantity of each would be required to afford an equal quantity of sulphuric acid; what is the degree of solubility, and the tendency to form fresh compounds when in contact with the soil.

A consideration of this subject, suggests another interesting inquiry, viz: how can gypsum be most advantageously applied to plants? One might have supposed that it would have been of little moment whether it was worked into the soil previous to sowing, or strewn on the plants early in the spring, or if there was any difference, it would be in favor of the former practice, as by that means the gypsum would be more thoroughly mixed with the soil, and be useful to the plants from the commencement of their growth. The experience of farmers, however, points to a different result, and seems to indicate a peculiarity of action not yet understood, and which, therefore, requires to be cleared up by experiment.

Many have supposed that gypsum exercises the greatest influence when strewn upon plants in spring; some, indeed, consider that it increases the growth of plants in proportion to the length of time it remains on the leaves, and that if rain falls immediately after it is applied, it produces little or no effect. Cuthbert Johnson says—"he has noticed that the weather, at the time of spreading gypsum, has a very material influence on the result of the experiment. Its effects are never soon apparent when sown in dry weather, but if the season is damp, so that the powder adheres to the leaves and stalks, the effect is immediate." This, he says, has been observed in England and the United States. It is also said to be a well known fact with the sainfoin growers of Berkshire, the clover cultivators of Surry and Kent, and to the growers of lucerne in Essex and Middlesex.

In other instances, I find it has proved of great use to wheat, when strewn on the plants in spring, and it is said to produce immense crops of peas, if applied when the plants are "looking up." At Wellwood, in Ayrshire, gypsum and salt were strewn on a mixed crop of oats, beans and peas, which, by some means, had been much injured. The effect is described as like magic; the plants assumed a deeper color, and grew wonderfully. On the same farm, a similar dressing was applied to a portion of a crop of beans when coming into flower. The beans at the time were very weak, but they ultimately became as good a crop as other portions to which manure had been earlier applied.

Again, it is said in British Husbandry, that gypsum never appears to produce better effects than when it has been laid upon red clover already so far grown as that the leaves nearly cover the soil, "for there seems no doubt that it acts with the greatest force when it adheres to them, and that the longer it remains upon them the better."

These observations derive great support from a comparative experiment made by Professor Korte, who found that gypsum applied to clover, at different periods, produced the following results:

Undressed,		100 lbs.
Top-dressed,	30th of March,	132 "
"	13th of April,	140 "
"	27th of April,	156 "

Thus the benefit derived seems to have been in proportion to the extent of the foliage on which the powder could be spread. The plants most advanced in growth when the gypsum was applied, having, with the same materials, accomplished the most work in the least time. It is, doubtless, of importance to ascertain by further comparative experiments, whether gypsum is invariably most efficient when it remains some time on the leaves; and if so, what is the cause of this special influence. Does the gypsum act immediately on the plant, while in contact with the leaves, or does it acquire some property by being exposed to the air, which afterwards renders it more efficient when mixed with the soil? Gypsum, when spread on the floors of stables, is known to purify the air by abstracting ammonia, and it is not improbable that gypsum may, in like manner, attract ammonia from the atmosphere, when exposed thinly on the leaves of plants. It would in that case prove a more efficient manure. If a small quantity only of ammonia exists in a soil, and if there were present vegetable mould and other matters to prevent its escape, then gypsum would probably act by means of its sulphuric acid and lime only; but if before entering the soil, the gypsum had abstracted a certain quantity of ammonia from the air, the soil would obviously become richer in this essential food of plants. But if this is not the reason why gypsum is more efficient when strewn on the leaves of plants, is it probable that leaves have the power of disengaging and absorbing the sulphuric acid and water of the powdered gypsum? As sulphuric acid is an essential constituent of those plants to which gypsum is generally most useful, may not the presence of sulphuric acid in the plant, in a more concentrated form, and greater abundance than it would be if obtained from the soil only, cause a more energetic absorption and assimilation of alkaline bases from the soil, hence a more rapid building up or growth of the plant.

"Lectures on Agricultural Chemistry," it is said Peschier has observed that gypsum laid on the leaves is gradually converted into carbonate of lime. If this invariably happens, then the change is effected by one of the two causes mentioned; either the sulphuric acid unites with ammonia, or it is absorbed. If it does unite with ammonia, then what becomes of the sulphate of ammonia formed? Is it gradually dissolved by slight rains or heavy dews, and so washed off the leaves, or is it in this state absorbed by them?

Experiments like these, I fear, will be considered by many uncalled for and likely to be attended with too much expense. It is high time that a different mode of experimenting should be entered upon than has hitherto prevailed; it must be done, sooner or later, before any rapid or sure advance can be made in farming—and I cannot but think that there is wealth and energy enough in this country to prosecute such experiments now. If six hundred dollars can be given by an individual to listen, for a brief hour in most delightful raptures, no doubt, to the warbling of the "Swedish Nightingale," surely it would be no difficult matter for the farmers of a State to raise at least an equal sum, to conduct an inquiry which would tend to benefit them individually, add to the resources of the State, and, I may say, confer honor on the country. It has been said of the distinguished Von Thaer, a man who seems to have combined within himself a greater amount of practice with science than almost any other writer on agricultural matters, that "the first care of all societies formed for the improvement of agriculture, should be to prepare the forms of experiment, and to distribute the execution of them among their members." One State is distinguished for the growth of wheat, another for its dairy produce, another for raising cattle, and so on—let each State Agricultural Society consider what question it would be most for its interest to thoroughly investigate; then let the chemist, the vegetable physiologist, and the practical farmer, unite together in order to determine how the experiments should be conducted and what precautions must be observed in order to avoid the influence of disturbing causes, or of receiving evasive or erroneous answers to the questions it is desirable to solve. There is no nation on the face of the earth which should enter into such investigation with greater zeal than the United States. In Europe, and especially in Britain, great improvements have been made in agriculture of late years—and how have these improvements been effect-

ed? Chiefly by the skill and enterprise of the tenant farmer. On the strength of a lease, he has been ready to adopt suggestions, showing good ground for concluding that a profitable return would be obtained for money expended. He has laid out his capital freely, and although he may, during the time of his occupation, win back his capital with a liberal interest, yet many of the improvements he makes are of a permanent character; consequently when his lease expires he has to pay a considerably higher rent for improvements which he himself has effected, or give way to another who will. Now in the United States, where the majority of the farmers are owners of the land they cultivate, the case is very different; they have the prospect of reaping the full benefit of any improvements they may make.

JOHN TOWNLEY.

Port Hope, Wisconsin.

Java coffee, we learn from the Milton, (N. C.) Chronicle, has been successfully grown near that town. It was produced by a shrub only two years old, which sprouted from a grain of coffee planted on the north side of a house, and the fruit is described as looking in all respects like the imported article.—*Ex.*

Can this be so? It is very important if it is, and we will thank some of our North Carolina friends to inform us.—EDITOR.

For the Southern Planter.

SHEEP HUSBANDRY.

"One ton of hay will winter from five to seven sheep."—*Southern Planter.*

Mr. Editor,—Sheep husbandry will probably form a very important branch of the agriculture of Virginia, within a few years,—at least, such is the hope of many persons, both for its immediate pecuniary profits and its ulterior benefits, in the improvement of her lands. It is desirable, therefore, that no statement should be made, calculated to discourage its prosecution and extension, especially under the authority of the Southern Planter, if that statement be inapplicable to her situation and climate; and that the above extract is more appropriate to a Northern than a Southern latitude, will appear in the sequel.

The quantity of provender necessary to winter sheep depends upon: the length and severity of the winter—the amount and protection from weather—the size or weight of the sheep—and whether they are to be kept in a fattening, or merely in a healthy, thriving condition. In the latter case, we have reliable authority for saying that two and a half pounds of good hay per day, or its equivalent, with proper shelters, will be sufficient to support one hundred pounds of flesh and wool, in any of the different breeds—suppose, now, that Merinos be taken at an average of ninety pounds—South Downs at one hundred and ten pounds—and Bakewells or Cotswolds, or their cross, at one hundred and fifty pounds, as the basis of a calculation; it will result, that one of each kind can be fed as follows, viz:

	Merino.	*So. Down.*	*Cotswold.*	*Days.*
With	67½ lbs.	82½ lbs.	112½ lbs.	30
	135 "	165 "	225 "	60
	202½ "	247½ "	337½ "	90
	270 "	330 "	450 "	120
	337½ "	412½ "	562½ "	150

Or, in other form—and in order to use whole numbers, by cancelling the smallest fractions practicable, it may be stated that, instead of one ton, ten tons of hay will subsist:

Cotswolds.	*So. Downs.*	*Merinos.*	*Months.*	
35	48	59	5	
44	61	74	4	
59	81	99	3	x
89	121	148	2	x
178	242	296	1	

But the average weights of the sheep may have been placed too high; if so, the same quantity of hay would support a larger number.

These breeds are selected as being probably the best representatives of the large, medium and small sheep—or, the long, middle and fine woolled varieties—and (let it be remarked,) it is sincerely to be desired that Virginia farmers, in commencing or enlarging their flocks, will not be satisfied without either perfect purity of blood, or very high—the very highest grades in each kind.

The climate of the United States is such that the Northern flock-master has to feed full five months annually—whereas it is confidently believed that similar feeding could only be necessary in a very small portion of the Northern or the mountainous parts of Virginia—that a large portion of the State would not require more than four months; a still larger portion not more than three months; and, perhaps, one-half of the whole not more than thirty to sixty days of winter feeding—when the shortness of our winters, and the absence of snow for so considerable a portion of them—with the consequent ability of late fall, partial winter, and early spring grazing, are considered, this will not be regarded as too favorable an estimate. One ton of hay, then, will winter from six to fourteen sheep of the best quality in Virginia, and from four to seven in the Northern States, having due reference to situation and breed. What a contrast is here presented for our encouragement! And if sheep husbandry be found profitable there, (as it undoubtedly is,) how much more profitable might it be here, judiciously managed? ANON.

November 12, 1851.

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STATE AGRICULTURAL SOCIETY.

We invite attention to the "Plan for the Formation of Agricultural Societies," which will be found in another part of our paper, and which we fully intended to have published last month. Not desiring to commit ourselves to any particular scheme until we shall have examined all that may be presented, we yet cordially recommend the one to which we refer, to the consideration of the friends of this important movement. It proposes a moderate outlay, which will, no doubt, be a recommendation to the Legislature, disposed as that body must be to economize as far as possible: and it allows time to get ready for the exhibitions we shall have, which can certainly take place in two years.

We have not yet seen much evidence of interest in the proposed Convention to organize the Society, but we have not heard a voice raised against it, and have no reason to expect, out of the Legislature, any other opposition than that ominous shake of the head which expresses rather despondency than disapprobation. When we call to mind that the law authorizing our late State Convention was passed with only one petition for it, and was afterwards ratified by an immense majority, we see no reason to augur a failure from the general indifference to our present enterprize. Such things are rarely spontaneous, they must originate somewhere, and we see no insuperable objection to having a Society organized at the instigation of one single man, provided it be done on proper principles. All that is necessary is to convince the Legislature of the expediency of the thing and the impossibility of wresting it from its sphere for mere private advantage, and we take it for granted they will do it. Then, when the frame is provided, it will become the men of public spirit to build up to it; and if they are not cheered on by popular sympathy or the co-operation of numbers they must find their spring of action within, and reflect that

The fewer men the greater share of honor.

We have every confidence that the Society can be established; with more or less labor, perhaps; but labor which will bring with it its own reward, even should it fail to secure the gratitude of those who reap its fruits. The

thing is so reasonable in itself, so moderate in its requirements, and will be so beneficial, in its influences, to the whole State, but especially to the farmers, if they can be brought to view it in its true light, that we cannot permit ourselves to anticipate a failure. Let us look at some of the considerations which should weigh with us in this matter.

Farmers should be united for their own benefit in a compact mass whose energy can be wielded by a few as the representatives of all. In that way more can be accomplished, and more effectively, than if left to individual exertion. Forty horses could never transport a train of freight cars, but one locomotive of twenty horse power can do it easily and economically. And as steam in the material world is nothing more than a vast amount of repellant power condensed into convenient space, so voluntary association, the steam power of the moral world, is but concentrating the diffused will of many into one focus of effort, and directing it upon a given point. Its force is resistless to those who employ it, and its effects beneficial; but it requires skilful officers to set it to work and control its movements.

We know it is the fashion with some to decry agricultural societies, to call them humbugs, and conclude their unsuitableness to our condition from their uniform failures hitherto. But when we look to their histories we should infer nothing from the past against the present. We have no time now to review them, but we may state that no Society in Virginia has yet been organized upon proper principles, and *no general system of auxiliary measures has ever been pursued.* And should we admit, for the sake of argument, that, so far as professed objects are concerned, such Societies are humbugs, yet it may happen, as in the case of some other public institutions, that their indirect advantages will greatly overbalance the defects in their constitution. Look, for example, at the county courts of Virginia. Though their decisions are generally just, because law is but the expression of natural justice, yet they are so tardily rendered as to amount in many cases to a denial of right, and would have been long ago supplanted by a prompter tribunal, were it not that the genius of our people, eminently just, honest and peaceful, has rendered such a reform unnecessary. In matters of police their inefficiency is universally admitted. Yet we have always regarded them as a most useful institution. They bring men together who would otherwise never meet, and by that means alone, directly and secondarily, diffuse an amount of general information far greater than is conveyed by the boasted free schools of the North. So these Societies, if made attractive, shall assemble people from all parts of the State, make them intelligent by the mere force of contact and attrition, enlarge their sympathies with their fellow-citizens as it shall extend their acquaintance; and thus rid us of our local conceit, and show just grounds for State pride. In New York where the prodigious throng at their Annual State Fairs is measured by *acres*, and can only be enumerated by conjecture, such an effect has attended their exhibitions; and that most utilitarian State, after an experience of more than twenty years, appropriates eight thousand dollars annually to agriculture. The efforts of her State, and affiliated County Societies are perceptible everywhere. Their enterprizes, carried out by the Legislature, when they have not the power, have achieved such tangible results as the improvement of stock, and farming generally, a geological survey, the foundation of an agricultural college, and the establishment of an agricultural literature, not very good to be sure, but better than ours, *i. e.* better than nothing. Another very important consideration is that such an institution is a ready nucleus of combination for defence against any adverse influence of the body politic. For instance, in New York a society of madmen, or worse, has sprung up, whose only tenet is that every man shall be restricted to a certain small quantity of land, and shall not purchase or inherit more. Should the State Society choose, they can crush that faction at any time, as by their general course, they weaken it at all events. True, such a faction is not possible here at this time, and bodes no serious danger *there* at present: but nobody can tell when men are going to run wild, and we *may* become "cossack" in our very republicanism. Be that as it may, it can hardly be denied that the general tendency of laws is in favor of the very rich and the very poor. We standing between them and bearing the burdens of government, should become "a law unto ourselves." It is practicable to do this without

treading upon "the debateable ground" of politics.

The economics of agriculture are rarely studied or understood by legislative bodies, composed as they generally are of lawyers. They would be very willing to make an informal surrender of all such matters into the hands of a society not inclined to abuse the trust. Suppose such a society, imposing from its size, and influential from its respectability, should request a heavy premium to be offered for the best wheat-reaper to be furnished at reasonable cost. The request of such a body would go much farther with the Legislature than the most convincing petition from an individual. It certainly should, because it divests them of much responsibility. So of any important modification in the laws relating to agriculture, or the passage of any law in regard to that interest. In the general field of politics men will not quit their party even for uncommon special advantages. But here all such matters can be arranged as under a flag of truce.

It may also extend its sphere abroad. Thus at present certain people at the North, whether from enthusiasm, from the imagined popularity of the measure, or from hopes of plunder, are striving to create an agricultural bureau at Washington—a Patent Office humbug on a gigantic scale. It is to be feared they will succeed. But were State Societies formed and confederated, they might, as they probably would, remonstrate and expose the perniciousness of this scheme, whose greatest effect will be to supplant their solid usefulness by costly delusions.

Other arguments rise to view, but we forbear to urge them lest we weary the reader. How a society shall operate directly, powerfully, and speedily to improve all our breeds of stock we will explain hereafter, and state a plan for this purpose,—which can be commenced at once,—so simple, so obvious, so cheap, and so sure that it has struck us with surprise that none of the farmers of Virginia have ever suggested it to the public or adopted it themselves.

For the present we conclude with the remark, that two or three very promising societies in Virginia have been badly hurt, if not killed outright, by Presidents! It is too much our habit to seek *distinguished men* for such offices. Now we have as much respect for those gentlemen in their proper places as others have. Sometimes they may happen to be our personal friends, whom in a proper manner we would treat with great consideration. But as an agricultural journalist we must say, that if they have been all their lives professional men, it cannot be expected that they should know anything of agriculture, who, as we know, to our cost, is as jealous a mistress as the law is said to be. To suppose otherwise is not so much to compliment them as to disparage ourselves. The President of the new Society, if we have one, will have work on his hands. We, therefore, want for the office a man of leisure, zeal, activity, energy, tact, address, and a knowledge of his profession. Such men can be had. We have our eye on two such now. Doubtless there are more. With such, we succeed, without such, we fail again.

Finally, we beg that we may have at least respectable delegations from all Farmer's Clubs, and from all counties which shall be warned by this notice in time to appoint them.

The Convention meets in the Capitol at Richmond on the 19th of February in the evening.

AUGUSTA FARMERS.

We have the pleasure of a goodly list of subscribers in Augusta, and most of them pay in advance. They are a ready money, if not a "hard money," set of fellows, and good fellows too. We like that people. But in one thing they should not be imitated—they don't keep their other promises as well as they do their promises to pay. Several of their best farmers promised to write an occasional essay for the Southern Planter; and not a scrip of the pen have we had from them yet, not a word. Why so? They farm pretty well in that section we know. Bashfulness is not one of their failings either, as we know quite as well. When we go over there sometimes on a little cattle expedition, it does our heart good to hear them brag over us. They raise more and bigger horses, more and fatter cattle, more and better woolled sheep, more and larger hogs, more and richer milk, more and sweeter butter, more and heavier wheat, and corn, and rye, and oats and hay, ranker clover and richer

grass, bigger chickens and better eggs, sweeter honey, stronger whiskey, clearer water, and vastly finer men and prettier women than we poor Tuckahoes. They can out-trade us, outwork us, (know better than we, at least in Rockingham, which is nearly the same, the difference between *a "long-handled and short-handled hoe,"* some think Powell's Gap might have been tunnelled with "a short-handled grubbing hoe,") outplough us, outdrive us, outpull us, outride us, whip us; "dive deeper and come out drier," as the Kentuckians say, "than any man in *these* parts." In short, they bang us out at every thing, from a trade to a sermon.

All this we have often admitted. But why don't some of them tell us how it is done? There is a secret in it, we know; for, in the several pleasant visits we have paid them, we never found it out, though looking with all our eyes. Nay, so close are they, that when an occasional *quo'he* does emigrate to this side, he seems to lose his superiority, and becomes all at once no better farmer than we are—hardly so good. He leaves his secret behind him. But when several of their crack farmers promised to write, we thought we should certainly have it. Won't they tell us? We know that some of them can, if they only will.—Will our friend, Mr. Cochran, go after them "with a sharp stick," and see that they do? We want to hear from them.

Seriously, gentlemen, won't you write?—Your subscriptions are a considerable item, but a communication from any one of you who know how to farm so well, will be worth more than ten times your dollar. And then there is Rockingham with its thousand farmers—but we don't like to speak of Rockingham. Out of those *thousand* farmers, we have only about THIRTY subscribers. We must go there again. "Lehigh must do better."

HOT BEDS.

In the January number of this paper we published a short and sensible essay on hot beds from the New England Farmer. We refer to the subject again to say that the use of glass is an unnecessary expense which may be easily avoided. We have about as good luck as common, neither better nor worse, with our hot beds, and we never covered one with glass. The substitute has been a piece of cotton cloth—an old sheet is as good as anything else—made somewhat larger than the frame of the hot bed, so as to lap well over its edges in covering. At the upper and lower ends sticks are sewed in the cloth its whole length to give it weight enough to keep it stretched, and prevent the wind from blowing it off. In addition, for the sake of security, we generally lay a few sticks, pea sticks or bean poles, according to the size of the frame, across the cotton: then it can't be moved. It is recommended that the cotton be oiled, which makes it semi-transparent. But we have not thought that indispensable. The hot bed is then managed just as if you had it covered with glass; and we think the plants succeed quite as well. Our old friend, Quintin Blain, a very experienced market gardener, near Richmond, saw ours last spring, and approved it.

The great difficulty in hot beds is not so much in the covering as in keeping up a uniform heat in the bed and preventing the fermentation from being completed before the season or the plants are far enough advanced to dispense with the warmth thus engendered. We do not know any better directions on this head than are given in our last number. By personal attention and observation, experience will teach the gardener better than any minute direction, and even with that guide, we have sometimes known the most skilful fail with hot beds.

A mode of growing tomatoes that we have seen recommended, and shall try, is this: At the usual time of sowing the seed, dig holes where you wish to plant, a foot deep; fill them up half with fermenting manure and half with rich soil well mixed with well rotted manure and therein plant the seed. Then have box frames made larger than the area of the hole, say eighteen inches square and tack cotton over the top of it. Let these set over the tomato plants, removing them occasionally after they have come up, to give air, until all danger of frost has passed. This saves the risk and loss of time from transplanting, and is said to answer as good a purpose as hot beds. Twelve plants thus treated, taking good care to have but one in a hill, will suffice for a moderate sized family.

VOTE OF THANKS.

Our thanks are due to a large number of friends, both in our own State and North Carolina, for a considerable addition to our subscription list. We do not generally notice these things—not because we are ungrateful for such favors, but because we really have not room. Our paper is so small, and we are so anxious to fill it with valuable reading matter that we begrudge even the space given to advertisements. Our January number was pretty full of original and valuable communications. The present issue has quite as many and as good, and we have a good supply of capital articles for March, and "more a coming." We hope, therefore, that our failure to make acknowledgements will not be thought to arise from indifference.

HOLLOW HORN.

At our instance Dr. Minor of Charlottesville reported for the last number of the Planter a case of what is commonly called hollow horn, including his treatment of the patient and an account of the *post mortem* examination. We publish now a confirmation of his views by Youatt, which the Doctor has never seen, and which we would have inserted along with his report but for fear of making the article too long. We also add our testimony, though as we are not "professional," it cannot be deemed so conclusive. We had a very fine work ox, in excellent order, taken with some affection of the head which caused him, whether standing up or lying down, to turn in a circle, and constantly to the *left* as long as he was able. The attack was preceded by a nasal gleet, which accompanied it, throughout. The overseer said it was hollow horn, which we did not believe, but, nevertheless, permitted the horn to be bored.—Nothing but a little healthy blood followed the withdrawal of the gimlet. Having no faith in the nostrums usually prescribed, we suffered the case to run, unassisted by the cow doctors, to a speedy and fatal termination. Upon dissection of the head, the *left* hemisphere of the brain, towards which he had inclined was found completely "broken down" or disorganized: the base of the left horn very slightly implicated.

The notion that this disease originates in the horn itself seems to us to be an error resulting from that backward mode of reasoning which confounds symptom with disease. The disorder in that organ should rather seem to be secondary.

Not less erroneous do we deem the opinion held by some that the horn becomes frost bitten, and then putrifies. Though its whole inner surface is exceedingly vascular, yet it is perfectly protected by the almost insensible horny covering in which it is cased throughout, except only a very minute ring at its base, whose pulsations are the most accurate index of the pulse: and that ring, hardly wider than a thread, cannot be affected by cold. We have consulted Youatt and several other veterinary authors at various times, and we have never yet seen even an allusion to such a disease as hollow horn, or any thing like it. When it is considered that it is a substance of lower vitality than the hoof, which never becomes frost-bit, even though chilled by an iron shoe, reason should teach that it cannot be injured by cold.

There is another disease here treated of as palsy, which we commonly call getting *on the lift*, and sometimes tail-slip, which is so often connected with what is called hollow horn, and leads to such absurdities that we insert Youatt's account of it entire.

INFLAMMATION OF THE FRONTAL SINUSES.

The whole of this cavity is lined by a prolongation of the membrane of the nose, and when one part of it is inflamed, the whole is apt to be affected. This accounts for the very serious character which nasal gleet, a discharge from the nostril, sometimes assumes in cattle. In the horse we think little of it, except it has a glanderous character, or is connected with considerable cough or fever; but the sooner a gleet from the nose of an ox is examined into and properly treated, the better; for the inflammation is far more extensive than that which occurs in the horse.

After a little cough, with slight nasal discharge, we occasionally find the beast rapidly becoming dull and drooping, and carrying his head on one side. Either grubs or worms have crept up the nostril, and are lodged in some of the sinuses, and are a source of irritation there; or inflammation, at first merely that of the membrane of the nose, and connected with common cold, has extended along the cavity, and is more intense in some particular spot than in others, or has gone on to suppuration, and matter is thrown out and

lodged there, and generally about the root of one of the horns. The veterinary surgeon does one of two things; he either opens the skull at the root of the horn with a trephine, or he proceeds in a more summary and a better way—he cuts off the horn at its root. More than a pint of pus has sometimes escaped at the orifice, and although there may not have been any suppuration and throwing out of pus, yet the inflammation will be materially relieved by the bleeding that necessarily follows such an operation. The opening into the sinus which is thus made should, however, be speedily closed, or the stimulus of the atmospheric air will render the inflammation worse than it was before.—*Youatt on Cattle, Eng. Ed. p.* 275.

PALSY.

There are many low, woody, marshy situations, the cattle in which are notoriously subject to palsy. It is frequent everywhere during a cold, ungenial spring, and there are seasons in which it assumes the character of an epizootic. Old beasts, and those that have been worked, are particularly subject to it; and especially when they are cruelly turned out to gather their scanty food during a cold night, after a hard day's work. It is lamentable to think how many of the diseases of our quadruped servants derive their origin from our negligence or cruelty. A damp and unwholesome cowhouse, from which the litter is rarely removed, but putrid effluvia mingle with the aqueous vapor that is continually rising, is a fruitful source of palsy, and especially if to this be added the baneful influence of scanty and bad food and stagnant water. Old cows, whose milk has been dried, and who cannot be made to carry much flesh, are very subject to this complaint.

Palsy is usually slow in its progress. There appears to be a general debility; perhaps referable to the part about to be attacked more than to any other; and it will be afterwards recollected, that there was a giving way, or trembling of that part, and sometimes, but not always, a coldness of it. The hind limbs are the parts which are most frequently attacked. It is at first feebleness, which increases to stiffness, awkwardness of motion, and at length to total loss of it. We have seen a few instances in which the fore limbs have been the principal seat of the disease, but then the hind limbs have always participated in the affection. In no case, however, have we seen any affection of one side of the animal and not of the other; this is a difference in the symptoms of palsy in the human being and the brute, for which we are not able satisfactorily to account.*

* It may be a very rare thing for a cow to be affected with *hemiplegia*, as we believe physicians call that sort of paralysis which attacks one side only of the patient. But we well recollect a case of a cow of Col. Randolph of Albemarle, which did have just this form of palsy, and died of it.—Ed.

In many parts of the kingdom this complaint is traced to a most ridiculous cause.—The original evil is said to be in the tail; and all maladies of this kind, involving the partial or total loss of motion of the hind limbs of the animal, are classed under the name of *tail-ill*, or tail-slip. Our friend, Mr. Dick of Edinburgh, has taken up this subject in a very interesting point of view, in the fourteenth number of the Quarterly Journal of Agriculture; and the public are much indebted to him for dispelling a false and injurious and cruel superstition. The farmer and the cowleech believe that the mischief passes along the cow's tail to the back, and that it is on account of something wrong in the tail that she loses the use of her legs; and then some set to work, and cut the cow's tail off; while others, less cruel, or more scientific, make an incision into the under surface, and allow the wound to bleed freely, and then fill it up with a mixture of tar and salt, and we know not what.

In some parts of the country, the practitioner is not content with this treatment, but, supposing there is witchcraft in the business, he has recourse to some charm in addition to the cutting and dressing. This charm consists in binding a small piece of the rowan tree on the extremity of the tail, and making a black cat pass three times round the cow's body, over her back, and under her belly, which (if it happens to be a strange cat, as is often the case, from the necessity of the color being black) so enrages the animal, that she mews and scratches with all the fury to which she is so easily excited, until she escapes from the hands of the necromancers, leaving them convinced that the Devil has got into the cat.

Mr. Dick, with a kind consideration, for which he deserves much credit, condescends to reason the case with these foolish people, and what he says is so much to the purpose, that we cannot refrain from introducing it here. The disease, in ordinary cases, is said to consist in a softening of the bones about the extremity of the tail, and is to be distinguished by the point of the tail being easily doubled back upon itself, and having at this doubling a soft and rather a crepitating kind of feel. But what is the real state of the case? The tail is lengthened out to the extent of about three feet, and is formed like a common whip. Towards the extremity, the bones terminate gradually, becoming insensibly smaller as they proceed downwards. At this part is said to be found a soft space—the *tail-slip*. Beyond this, again, a firm swelling cartilaginous portion is found, covered with hair to brush off the flies within its reach. Now why have we the long column of bones; the termination with a soft space of a few inches; this thickened, hard, cartilaginous part, at the very extremity, and that extremity covered with hair, but with a view to form a whip to drive off, and with the greatest possible effect, the insects which wound and torment the animal?

"Here the column of bones forms the shaft

or handle of the whip, the soft part, the connexion between the handle and the thong, while the thickened extremity may be easily recognised to represent the thong, and the hairs to form the lash, or point; so that we have a whip to drive away the flies, and so complete a one that the coachman may borrow a lesson from its construction."

We trust, therefore, that our readers will never be found again looking at the tail of the cow for an explanation of palsy, or any other complaint; (for this *tail-slip* is supposed to be connected with various other maladies;) but we will allow them to examine it once more, in order to admire its adaptation to the purpose for which it is required, and the peculiar contrivance of this supposed diseased part, for the more effectual accomplishment of this natural purpose. It may, however, be asked, is not relief sometimes given by these operations on the tail? Very probably. We do not know what would make a cow get up and use her limbs, if the punishment of the knife, and the rubbing in of the tar and salt failed; and we can very readily conceive that the loss of blood would often be beneficial, but not more because taken from the tail than from any other part.

The most frequent cause of palsy is the turning out of beasts of every kind, but particularly of cows, too early to grass, after they have been housed during the winter and first part of the spring. We have known one-fourth of the stock completely chilled and palsied behind in the course of two or three nights. The general health has not been much affected, except that, perhaps hoose has come on; but the beasts have lain three or four weeks (we recollect one that lay three months) before they recovered the use of their limbs.

The treatment of this disease would be half summed up in one word—*comfort*. The cattle should, if possible, be immediately removed into a warm, but not close, cow-house, and well littered up, and perhaps a rug thrown over them. It has been proposed to sling them, but they are rarely comfortable in the slings, and very frequently galled. If they are well littered up, turned twice in the day, and so laid that the fæces and urine will flow from them, they will be much better without the slings.—*Youatt, p.* 301.

ANALYSIS OF SOILS.

It will be seen, in our advertising columns, that Professor Gilham of the Virginia Military Institute offers to analyze soils. The subject of analysis of soils is a very important and interesting one, and we should be pleased to see it liberally patronized by the State. We see by our exchanges that some of our farmers are sending their soils out of the State to be analyzed. They need do so no longer, as we have now an analyst at home. A very favorable indication with us in behalf of Professor Gilham is that he *does not state his charges* for analyzing soils. This looks honest. We assure our readers that when any man offers to analyze their soils for *five dollars!* that he is either a fool himself or trying to make fools of them. We know this fact on the testimony of a distinguished chemist in whom we have great reliance. We, therefore, warn them distinctly against patronizing any of the quacks who profess to do in *all cases* for five dollars what is often worth double, sometimes more than double, and never as little as "the regular fee." Let them beware of all such pretended chemists.

FARMING IN TIDE WATER VIRGINIA.

In a late visit to parts of the counties of Hanover, King William, King & Queen and Essex, a district with which in former times we had been familiar from boyhood, we were delighted to witness the improvement which ten years had made in the whole face of that country. It is drained by the waters of the Pamunkey, the Mattaponi and the Rappahannock; and except immediately upon the rivers and their more considerable tributaries, and occasionally, but very rarely, in "the forest," as the uplands are there called, it was formerly, and until within a few years, very inferior in the quality of its soil, and in many places actually sterile; as it still is where no improvement has been attempted. Even the river flats, where not naturally unproductive, had been rendered comparatively so by improper culture, and many spots, sometimes whole fields, which now teem with abundant crops, had been turned out as worthless and appropriated by broom sedge. Where the soil was neutral, it had become exhausted by the two, or at best, the three field rotation, whilst the acid uplands, many of them as level as the river flats, overrun with sorrel and hengrass, were upon the point of giving out altogether. Tillage was rude and slovenly. Drainage, though of the first necessity, had been entirely neglected, or executed in so imperfet a manner, that much the greater part of the labor expended in ditches and water furrows, was thrown away. The water of underlying strata

permitted to ooze to the surface and saturate the soil, collected in many places into natural ponds, and the copious streams were either imperfectly led away, or permitted to form swamps, by the accumulation of drift and the growth of bushes and briers. Thus the fields were poisoned with stagnant water, and the air filled with unhealthy exhalations. Under such circumstances, it is not surprising that barrenness and autumnal diseases were so prevalent as to be thought the natural and unchangeable characteristics of the country.

The culture of tobacco had ceased; there were no fresh lands to be cleared, and no grass to support stock from which manure might be made in sufficient quantity for even a small crop of it. Wheat and corn, the former sometimes substituted by oats, and more rarely, by rye, had become the sole staples, and under the scourging rotation then pursued, had reduced the soil to the lowest ebb. The large majority of farmers were thought well off if they could clothe their negroes, and feed them somewhat scantily, and support their families in decent comfort. Few were beforehand, and none made fortunes, except the niggard, the money lender, and the man of superior skill and judgment. Slave property was valuable, more from its marketable increase, than its manual productiveness. Lands were low and plenty in the market—buyers rarely eager. Emigration rolled in a rapid and swelling tide. All but the thoughtless began to despair.

At this stage of lowest depression, the Legislature of Virginia proposed a remedy.—Roused by the negro rebellion in Southampton to look into the internal polity of the State, the Hall of the House of Delegates rang with lamentations over the evils of slavery. The impoverishment of the lands, and the consequent poverty of their owners, was charged to that cause; grave and prudent statesmen, "men of head and thought," pointed to tide-water Virginia as a sad instance of its blighting effect, and boding utter ruin from its continuance, sought speedy riddance of the curse by means which, had they been adopted, were to have commenced some years ago.

Just at that time, and just twenty years ago, to wit, in January, 1832, Edmund Ruffin wrote a modest little book entitled "An Essay on Calcareous Manures." He was a *book farmer*, a term of reproach among some people; and one word in one book, the word "acid," had led him to adopt a *theory*, another term of bad repute with the same class. By continued and persevering effort, extending through a period of fifteen years, he had perfected that theory into successful practice, and now ventured to give the results of his thoughts and his labors to the farming public.

Not in terms, to be sure, but none the less in effect, he took issue with the politicians, and traced the cause of the depression of tide-water agriculture to a matter, entirely independent of slavery, to a want of carbonate of lime in the soil, and to a consequent excess of acid which rendered abortive the best directed efforts at permanent improvement. It were needless, if we had the space, to trace the success of this theory. Slowly and gradually, amid the discouragements of poverty, the blunders of ignorance and the doubts of prudence, that little book did its work. The statesmen were in error—the practical farmer was right. In spite of the *increase* of slavery, tide-water Virginia stands redeemed. The people of that favored land are growing apace in wealth and energy and enterprize; and these, wisely directed, will bring in their train every other element of the highest rural improvement and civilization.

Numerous facts attest the fidelity of this flattering picture. The assessment of the lands of tide-water, showing an increase in their value of something more than seventeen millions of dollars, or twenty-eight per cent. in twelve years, is not a fair index of their improvement, because lands there are generally rated below their productive value; and the valuation made by assessors, we believe, is uniformly less than the cash price of the land. Neither can it be rated by the wonderful increase of the whole wheat crop of Virginia, about one hundred per cent. in nine years; because much of the wheat grown on tide-water seeks other markets than Richmond. And whilst it is known that some farmers there have increased their wheat several hundred per cent. it is believed that nearly all who use calcareous manures have doubled their crops within the last seven years. The best evidence of the rapid advance that agriculture has made in this country is rather to be gathered as matter of sound inference from the individual facts, which every where surprise the enquirer.

Among which, not the least striking is the fact that we find scarcely any lands in market. Better evidence of thrift can neither be asked nor given; it proves that every one is content with his present gains, and the chances of increasing them.

This, then, is the prospect, at present, of the country in question, and we presume of all that lies in the same range. But there is serious reason to apprehend, unless they follow up the improvement so happily commenced, with other appliances, that they will not speedily reach the destined goal. The introduction of lime is a great thing, and indispensable in their husbandry. So is the use of clover and peas. But the art of farming does not consist in employing these agents alone. Their lands are only *improved*, not *made*; and there still remains much to be done before they shall be free from all danger of relapsing into a condition not so bad, perhaps, as they have lately emerged from, but still bad enough to be provided against, as it may be now, by proper means.

So magical are the effects of clover when first grown upon land, that it is not surprising that they have been every where greatly overrated. Yet wherever relied on as the sole, or principal means of enrichment on any, except the most extraordinary lands, as in Clarke and Jefferson counties, for example, it has never failed ultimately to exhaust them. Avoiding the tedious citation of many instances of this rule, let it suffice to refer to Western New York, and parts of Piedmont Virginia, as fair, prominent, and well known cases in point.—In both, large wheat crops, grown in rapid succession upon heavy clover leys, encouraged to such frequent repetition, that now, in each, the yield of wheat has greatly depreciated, and clover has ceased to grow with its former luxuriance. Thirty years ago the philosophic President Madison observed to a neighbor, exulting at the prospect of his rank clover fields, that "clover would make a rich father, but a poor son." The farm on which he made the prediction has ceased to grow wheat. There is no doubt of the fact anywhere, and in England it is so well understood that the land there, save their richest alluvions, which are farmed on a distinct system, are never sowed in clover more than once in seven or eight years. When lime, in any shape, stimulates the growth of clover, the catastrophe will only occur more speedily. Not to go beyond our own or readers' depth into the science of these matters, and yet not to dogmatize, let us state briefly the operation of these fertilizers and exhausters, for they are both. It can be done on principles of common sense with but little aid from that rather mysterious thing, analysis of soils.

A crop of ten bushels of wheat is taken from an acre of land. This gives of grain six hundred pounds, and of straw twice as much, or twelve hundred pounds—eighteen hundred pounds in all. Here then is eighteen hundred pounds of something or other, which has made this wheat and straw. It is evident that all cannot have come from the air, but that a portion at least has been derived from the soil. Throwing out of account the very considerable part which goes off in and with the smoke, when it is burnt, we find the residue, the indestructible part, the *ash*, which remains, equal to about forty-two pounds, or two and a half per cent. of the weight of the whole. This would seem to be too trifling a quantity to effect the yield of a crop of wheat, but we know it does, since there are very few lands that will bear wheat after wheat, unless they have had a very long rest. And when we consider that some of the elements of wheat exist in the soil, at least in an available condition, in very slight quantities, and when we think what effects are sometimes produced by one hundred pounds of guano, or forty of gypsum or ashes, we shall be better prepared to admit its importance. But let this quantity be removed twenty times, as it will by the wheat and corn grown upon a farm in thirty years, according to some rotations, and we have eight hundred and forty pounds of the most valuable part of the soil abstracted; most valuable, because most costly to restore.

Now clover is said, and with justice, to be "the mother of wheat." Independent of its mechanical action in deepening soils by rendering them more porous, and thus affording them the benefits of aeration, and so indirectly operating to increase the crop of wheat, it also, by its decay, affords food for the wheat plant to live and grow upon. But whence comes this food? The ashes tell us, from the soil, and from the subsoil, by means of the sap of the clover, as far down as its roots have penetrated. Now then, we can calculate that clover alone,

repeated indefinitely upon a certain breadth of land must, sooner or later, extract from that land the substances out of which it elaborates the food of wheat.

But the lime comes in aid of this action. Independent of *its* mechanical action, for it has, like clover, a mechanical action, differently exerted on different soils, and happily adapted to remedy the defects of each, and independent too of its power to correct the acids of soils; it is also supposed to dissolve the substances that compose the food of plants, and to dispose them to take on that chemical action necessary to fit them *for* food. By this means the growth of clover is forced beyond what it might be otherwise. Whether this explanation be true or not, all know that lime makes clover grow with greatly more luxuriance than it can do without it. It is then evident that this does but accelerate the rate of exhaustion from clover.

We think the vast majority of the lands of lower Virginia are especially liable to this general law. They are not rich. For the most part light, friable, and easily worked, which requiring less labor to work them, compensates, perhaps fully, for their deficient fertility, they are of that class of soils which, being readily penetrated by the roots of plants in all directions, give up their contents with least difficulty.

This doctrine may be disputed by many farmers, who are deceived by the manner in which their lands have heretofore responded to lime and marl. But we are happy to know that others admit it now upon evidence afforded by their own farms. Expressing our views on this subject to our friend Mr. Hill King, of King William, he said that his land did not now grow clover as well as at first. Yet his tract, near the Court House, is equal to any in its neighborhood, and is, as all know, who know him, exceedingly well farmed. It is probably also occurring elsewhere, but is not yet suspected, and may not be distinctly observed at any given time. Farmers at large are not very remarkable for persistent observation, and in the matter of decrease and failure of crops are rarely candid even to themselves. To those extrinsic impediments must be added the consideration that a process of nature extending over a long period, cannot be accurately measured by the crops of last, this, or next year, but by a comparison of general results at distant intervals. When this is made, we take it for granted that no exception will be found in tide-water to the operation of a general law.

But let not its impendence excite alarm. It is wisely ordained that we shall be checked in wasting the treasures of the earth and forced to restore them by varied culture. Had the tillage of one or two staples satisfied our wants we might have become stagnant and monotonous, and been tempted to forego that ceaseless and eager effort which is the grand characteristic of civilization. Another step must be taken to avoid this danger, one that has been often tried elsewhere and been always found to operate a cure.

That step is the introduction of stock husbandry in some of its shapes. We shall speak of it next month. Whether we can chalk out the mode and manner in which it should be introduced, as clearly as we think we have done, the necessity of it is somewhat doubtful. It is always easier to pull down than to build up. But we shall try. A failure may stimulate some more competent hand to trace out the true plan.

The following letter, for which we thank the writer, settles the question about the Osage orange's living from the slip.—Ed. Pl.

For the Southern Planter.

OSAGE ORANGE FROM THE SLIP.

Mr. Editor,—Last winter I purchased from General Richardson one thousand plants of the Osage orange, which were forwarded by the canal to Buchanan, and reached me about the first of March last, in excellent order.—The roots were wrapped with moss and the tops with straw, and might have been transported any distance with perfect safety. When opened, the roots were as moist as if they had been just taken from the ground. Having cut off the tops, the roots were set out, about six inches apart, and grew rapidly—say from two to three feet in height, notwithstanding the unusually dry season. Not a single one, that I am aware of, perished.

Having seen, in a previous number of the Planter, that a doubt was expressed as to whether the plant could be propagated from the slip, and, at the same time, a request, that any one who had tried it, would communicate the result, I had the tops, after being cut to the length of about a foot, set out in a bed,

prepared for the purpose, from six to eight inches deep, and, contrary to my expectation, (for the drought was excessive during the summer,) nearly all of them lived and grew off finely, attainining as great a height, and presenting as thrifty an appearance, as the plants that grew from the roots. How they will stand the winter, remains to be seen.

Having promised in your last paper, an article on the Osage orange in your next, I thought it might not be uninteresting to you to communicate the fact, that it may be propagated from the cuttings.

Whilst upon the subject of enclosures, I hope you will say something about rock fences. For the sake of experiment, I had, during the past year, about a quarter of a mile of fence built of limestone rock, which abounds in this region, put up. The rock was obtained partly from the surface, worked out with crowbars, and partly from the quarry, by blasting, and the cost, according to the best estimate I could make, counting the labor of my own hands, together with the wages of an experienced workman, hired for the purpose of putting up the fence, was one dollar and ten cents a rod, equal to about the cost of the same length of plank fence, which is usually estimated to be worth, counting the posts, plank, nails, holes and putting up, one dollar a panel of fifteen feet. But even if it cost double the other, in the first instance, would not the rock fence be infinitely the cheapest in the end? The one would need constant repair and occasionally require renewal—the other, if well put up, (out of limestone, mind you, which have, in the language of the masons, good *faces* and good *beds*, whilst the round rock used in many places, have neither, and are therefore liable to tumble down,) will last forever. Besides, I find that no kind of stock will attempt even to jump over a rock fence four feet high above the ground, except sheep, to whom it is fine fun. As to the pig, "his occupation's gone."

My fence is two and a half feet at bottom and from one to one and a half feet at top. A good hand (and our farm hands can easily be taught) will put up two rods a day, the rock being hauled and put along the line of the fence.

Respectfully, &c.

EDWARD JOHNSTON.

Lauderdale, Botetourt county.

For the Southern Planter.

BREAKING COLTS.

Mr. Editor,—As it has been my fortune to have seen many valuable farm horses spoiled and rendered comparatively useless by bad management in breaking, I think it may prove not unuseful to some of your readers to give them the benefit of my practice in breaking colts to harness, which is by no means new, but has been in use for many years, and only requires publicity to make it more generally practised.

The fall after the colt is two years old he should be bridled and tied securely to a pair of steady horses, and taken to the field and permitted to walk by the side of them for two or three days whilst they are at plough. The gear may then be put on, and the same process gone through for several days, when the colt may be hitched and worked for one or two days. He should then be turned out and not used any more until the next spring when he may be used moderately and again turned out, and taken up again and again throughout the season; after which he may be used as it may suit the owner. The advantage of this mode of breaking is that the horses rarely, if ever, kick; and are easily made to work to any kind of vehicle the owner may desire. In thirty years I have never departed from this practice without suffering more or less from it.

THOMAS GARLAND.

January 3, 1852.

For the Southern Planter.

USE AND PERMANENCY OF GUANO.

Mr. Editor,—From the fact of having used guano to a considerable extent, for several years, I am often receiving letters of enquiry as to its use, and especially latterly as to its permanency. It is surprising from the length of time that farmers have been using plaster, that scarcely two chemists agree as to its action, although all agree in its benefits to the clover crop on land that has lime. So it may turn out with regard to guano. Indeed, men may be very confident in expressing an opinion, and yet change their opinion for another. We have a remarkable instance of this in a discussion going on at this time in the American Farmer. Often have we been told of the danger of exposing guano to the air; yea, that it ought to be covered over, even in a house, unless mixed with plaster, or the ammonia would fly to the upper regions. Now it seems there is no danger, for that ammonia is not formed, but in the act of putrefaction. Again, it was supposed that the smell that every body was sensible of in approaching a bag of guano, was the ammonia flying off. Still, if a bushel of plaster were mixed with a bushel of guano, the smell was not lessened. It would, at this time, be profitable to your readers, to show the power that exists in mother earth to do what plaster will not do.

The Indians cover their meat with earth when they have more than they can eat, and find it preserved. So does the fox after eating a hearty meal, cover over with earth the remainder until he wants again to dine. These and other considerations have led to some very important discoveries within the last twelve moons in England, as to the power of the soil,

to do what plaster cannot do in detaining all fertilizing matters, committed to her trust.—That if ammonia, for example, were mixed with plaster, and both put into the soil, that an application of water to the soil would bring away the plaster and leave the ammonia behind, showing that the ammonia had a greater affinity for the soil than for the plaster. It would, doubtless, be very interesting to many of your readers to see the report made of all the experiments, before the Royal Agricultural Society, by Professor Way, on fertilizing agents, and that once committed to the earth there was a power to detain them for the use of plants; what this power is he does not say, but nothing that was tried could exceed it.—From the extensive use of drains in England, the farmers were unhappy at the thought that manure was carried down into them and escaped, and many of them imagined they could see the manure running out at the mouths of the drains. This unpleasant feeling throughout the farming community, gave an importance to the discoveries made by Huxtable, Thompson and Way, that nothing could exceed it. If you will be kind enough, Mr. Editor, to answer a query which I will state, and it be acceptable to you, I will give a short account of my manner of using guano, with some remarks touching its permanency, in your next number.

Query.—Is there no ammonia in guano as we receive it? I mean is it only in the act of fermentation that the ammonia is formed?

JAMES FIFE.

The above article of our friend, Mr. Fife, was mislaid, or it should have appeared in January. We shall endeavor to answer his queries in our next. If we had the report made by Professor Way, we would very gladly publish it. Can our friend furnish us a copy?—ED. PLANTER.

For the Southern Planter.

HEAVES.

Mr. Editor,—An esteemed young friend recently lost a valuable saddle horse that, according to his representation, might have been saved by the operation practised in various parts of the world on *hoven animals*. As this process is yet unknown to many, and the subject of scepticism with others, will you give it notoriety by insertion in your columns?

In a life of no short duration I have owned three coarse, or what would be termed cold-blooded, horses. During the time I had them they were subject, one particularly, to severe attacks of colic which were always cured by bleeding boldly and freely. My blood horses never suffered in that way; nor did I ever have one foundered, though a fox hunter for many years, and no inconsiderable traveller beside. Utterly repudiating the empiricism that introduced physicking generally, bleeding in the mouth, &c. and especially drenching, that has done an infinity of harm, wherever I have heard of the adoption of my mode of treatment it has been successful—and yet I do not claim to have originated it, for when but a boy it was told to me by a fisherman, who had it from his father that had been long employed in an establishment where a number of horses were used. Now I am not to be understood as saying that bleeding alone is remedial in cases where the cavity of the belly is filled with wind, for then, as referred to above, the knife is to be called into coadjutant aid of the lancet. The doctrine once so universally believed in that grubs killed horses by eating the maw is fast going the way of all *notions*, and will in time be entirely exploded.

After parting with you in King William, where I was pleased to find you made such additions to your subscription list, I passed several delightful hours with our worthy friend of Dunluce, who, after showing me several specimens of nice farming on an extended scale, took me to witness the operation of a portable saw mill lately erected for Major Fontaine by that meritorious artisan, Mr. Haw of Hanover. Its cheapness and adaptation to the propelling power of any wheat machine must make it an appendage of no small interest to all large farms. In bad weather, or when not otherwise wanting, the teams can be employed in working it, and if the owner should not keep an adequate supply of timber for this purpose, his neighbors would find it to their advantage to make up the deficiency.

JAMES GOVAN.

December 3, 1851.

It may be that our friend's blood-horses never "suffered in that way;" but we consider his case a lucky exception to the rule. We have never been able to ascertain that blood constituted an exemption, and for the small number we have had think that the per centage of colic was rather greater with such. A half bred mare is the most frequent subject to the attack that we now own. An old brood mare, by Timoleon, thorough bred, was on two occasions attacked at pasture without any predisposing cause that we could see, and a thorough bred Grey Eagle once had a severe attack from grazing in the yard during a smart sprinkle of rain at midsummer. At least, we could not imagine any other reason. We have heard of several other cases, too tedious to mention, of blood-horses that have been attacked, and some of them killed, by colic.—Still we go in for blood-horses of the right sort.—EDITOR.

PAYMENTS TO THE SOUTHERN PLANTER,

From the 1st to the 26th of January, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

Wm. H. Whiting, to January, 1853,	$1 00
Bev. Randolph, to January, 1853,	1 00
Smith Petty, to January, 1852,	2 00
Dr. D. H. Gregg, to January, 1853,	1 00
F. T. West, to January, 1853,	1 00
Richard Cawthorn, to January, 1853,	1 00
T. R. Argyle, to January, 1852,	1 00
Wm. G. Rogers, to January, 1853,	1 00
John Parker, to January, 1853,	1 00
Wm. W. Mead, to January, 1852,	5 00
Jos. Hillyard, to January, 1853,	1 00
Wm. Boulware, to July, 1852,	1 00
Rev. J. Shough, to January, 1853,	1 00
Archd. Pointer, to January, 1853,	1 00
Capt. J. L. Davis, to January, 1853,	1 00
E. J. Hill, to January, 1851,	1 00
L. H. B. Whitaker, to January, 1853,	1 00
Dr. C. Whitaker, to January, 1853,	1 00
Wm. S. Dance, to January, 1853,	1 00
Judge Field, to January, 1853,	1 00
John Grasty, to January, 1853,	1 00
W. R. Hankins, to January, 1853,	6 00
John H. Hankins, to January, 1853,	4 00
James Govan, to January, 1853,	1 00
Wm. Massey, to January, 1853,	1 00
A. L. Winfree, to January, 1852,	1 00
A. J. J. Brown, to January, 1852,	1 00
R. H. Allen, to January, 1853,	2 00
C. W. Friend, to January, 1853,	2 00
Dr. B. Dennis, to January, 1853,	1 00
Frederick Butler, to January, 1853,	1 00
Henry Carrington, to January, 1853,	2 00
L. D. Horner, to January, 1853,	1 00
Dr. E. F. Gunter, to January, 1853,	1 00
Fendol Chiles, to January, 1853,	1 00
A. W. Tally, to January, 1853,	1 00
J. E. Smith, to January, 1853,	1 00
Geo. J. Gardner, to January, 1853,	1 00
R. W. Goodwin, to January, 1853,	1 00
Benj. Henson, to January, 1853,	1 00
D. E. Hickman, to January, 1853,	1 00
Dr. M. Pendleton, to January, 1853,	1 00
R. W. Harris, to January, 1853,	1 00
Dr. W. J. Pendleton, to January, 1853,	1 00
Capt. R. Wright, to January, 1853,	1 00
C. G. Coleman, to October, 1852,	1 00
Preston Lipscomb, to January, 1853,	1 00
John Defarges, to January, 1853,	1 00
Wm. M. Turner, to January, 1853,	1 00
J. W. Taylor, to January, 1853,	1 00
Dr. Wm. Gwathmey, to January, 1853,	1 00
W. C. Latane, to January, 1853,	1 00
George Edwards, to January, 1853,	1 00
John H. Burch, to January, 1853,	1 00
Dr. W. H. Howard, to January, 1853,	4 00
James Wilson, to January, 1853,	1 00
Dr. H. L. Jeffries, to January, 1852,	1 00
George R. Trant, to January, 1853,	$1 00
John Sizer, to January, 1853,	1 00
John H. Walker, to January, 1853,	1 00
W. P. Courtney, to January, 1853,	1 00
Dr. Lemuel Edwards, to January, 1853,	1 00
Martin Slaughter, to January, 1853,	83
Geo. W. Major, to January, 1853,	1 00
Richd. T. Green, to January, 1853,	1 00
Thos. Starke, to January, 1853,	1 00
Dr. G. G. Minor, to January, 1853,	1 00
F. H. Mays, to January, 1853,	1 00
Jas. M. Strange, to January, 1853,	6 00
Thos. H. Garnett, to September, 1853,	1 00
John A. B. Thornton, to January, 1853,	1 00
Geo. C. Rives, to January, 1853,	1 00
Thos. J. Massie, to January, 1853,	2 00
T. E. Blount, to January, 1853,	1 00
D. S. M. Crump, to January, 1853,	1 00
Geo. Hairston, Sr. to January, 1852,	1 00
Colin Clarke, to January, 1853,	1 00
Prof. Bennet Puryear, to January, 1853,	1 00
Dr. A. Bryant, to January, 1853,	1 00
Col. W. Simmons, to January, 1853,	1 00
Wm. Smith, to January, 1853,	1 00
M. B. Halstead, to January, 1852,	2 00
J. H. Parker, to January, 1852,	6 00
H. B. White, to January, 1853,	1 00
M. T. Campbell, to January, 1853,	1 00
Wm. T. Bowie, to January, 1853,	1 00
John D. Farish, to January, 1853,	1 00
Joseph D. Withers, to January, 1853,	1 00
Patrick Haden, to January, 1853,	1 00
Saml. C. Gatewood, to January, 1853,	1 00
Edward S. Coleman, to January, 1853,	1 00
John W. M'Cally, to January, 1853,	1 00
Robert Garland, to January, 1853,	1 00
Messrs. Boxley & Hart, to Jan. 1853,	1 00
Stephen Dickson, to January, 1853,	1 00
Wm. Meredith, to January, 1853,	1 00
Thos. Watson, to January, 1853,	2 00
Wm. H. Clarke, to January, 1853,	1 00
Walter D. Leake, to July, 1852,	2 00
J. B. Whitehead, to January, 1853,	1 00
B. B. Keesee, to January, 1853,	1 00
R. B. Spratley, to January, 1853,	1 00
Benj. F. Terry, to January, 1853,	1 00
J. T. Hamner, (cor.) to January, 1853,	1 00
Ro. B. Harvey, to January, 1853,	1 00
Andrew J. Carper, to January, 1853,	1 00
Amos Crosby, to August, 1853,	1 00
Kemp G. Holland, to January, 1852,	2 00
A. Phillips, to January, 1853,	1 00
R. L. Rudicilla, to January, 1853,	1 00
Jos. C. Burton, to January, 1852,	1 00
Cyrus Dillard, to January, 1854,	3 00
Col. John J. Prince, to January, 1853,	2 00
J. T. J. Mason, to January, 1853,	1 00
Geo. E. Dabney, to January, 1853,	1 00
Wilson P. Dabney, to January, 1853,	1 00
Richard Baylor, to January, 1852,	2 00
John M. Tupman, to January, 1853,	1 00
Pleasant W. Meredith, to Jan. 1853,	1 00
Capt. Thos. Martin, to January, 1853, Rev. Thos. W. Roberts, to Jan. 1853, Littleberry M. Powell, to Jan. 1853,	2 50
I. Irvine Hite, to January, 1853,	1 00
T. C. Goodwin, to January, 1853,	1 00

Morgan Utz, to January, 1853, $1 00
Jas. S. Walrond, to January, 1853, 1 00
Oliver P. Gray, to January, 1853, 1 00
Col. Daniel Ammen, to January, 1853, 1 00
Henry Massie, to January, 1853, 1 00
Geo. W. Macon, to July, 1852, 1 00
James N. Stevens, to January, 1853, 1 00
John F. M'George, to January, 1853, 1 00
Jas. F. Jones, to September, 1852, 1 00
John Shepherd, to January, 1853, 1 00
Philip Edge, to July, 1852, 1 00
B. J. Barbour, (in full) to January, 1852.
W. W. Minor, to January, 1853, 1 00
Richard Dossey, to September, 1852, 1 00
Dr. A. H. Perkins, to October, 1852, 1 00
W. B. Irby, to January, 1853, 1 00
Geo. Rives, to January, 1853, 1 00
A. H. Moorman, to January, 1853,
V. O. Witcher, to January, 1853,
Moses A. Hubbard, to January, 1853,
W. F. Gardner, to January, 1853, } 5 00
John M. Patton, to January, 1853,
A. L. H. Muse, to January, 1853,
Jos. W. Morriss, to January, 1853, 2 00
P. M. Tabb, to October, 1852, 3 00
Nathaniel King, to January, 1853, 1 00
F. W. Connor, to January, 1853, 1 00
J. D. Watkins, to January, 1853, 1 00
Ed. W. Bell, to January, 1853, 1 00
Henry E. Coleman, to January, 1853, 1 00
Aaron Neal, to January, 1853, 1 00
Jas. S. Yarbrough, to July, 1852, 1 00
Jacob Ham, to January, 1853, 1 00
D. D. Ferebee, to January, 1852, 1 00
Wm. Cowherd, to January, 1853, 1 00
F. E. Brooke, to January, 1853, 4 00
Dr. M. Pendleton, to January, 1853, 1 00
Col. J. Peterson, to January, 1853, 2 00
Dr. R. Eppes, to January, 1853, 6 00
Col. S. Downing, to January, 1852, 1 00
John T. Rice, to January, 1852, 1 00
Wm. Smith, to January, 1853, 1 00
Dr. Wm. G. Pollard, to January, 1853, 1 00
John Lawrence, to January, 1852, 5 00
Archer W. Womack, to January, 1853, 1 00
J. R. Depriest, to January, 1852, 1 00
John D. Alexander, to January, 1853,
E. C. Jordan, to January, 1853,
J. R. Depriest, to January, 1853,
C. N. Michie, to January, 1853, } 5 00
Mrs. M. Henricques, to January, 1853,
John Murray, to January, 1853,
Saml. T. Miller, to January, 1852, 2 00
S. F. Hunt, to January, 1853,
Capt. W. S. Gillispie, to Jan. 1853,
James Whitehead, to January, 1853,
J. W. Allen, to January, 1853,
J. W. Womack, to January, 1853,
Edwin J. Redd, to January, 1853,
A. R. Venable, to January, 1853, } 10 00
E. H. Bass, to January, 1853,
E. H. Irving, to January, 1853,
R. H. Gilliam, to January, 1853,
Capt. H. Cary, to January, 1853,
T. T. Totty, to January, 1853,
E. N. Price, to January, 1853,
Edward Tarry, to January, 1853, 1 00
James T. Redd, to January, 1852, $3 00
Jesse B. Lucas, to January, 1853, 1 00
Mrs. Mary T. Moseley, to Jan. 1853, 1 00
Hiram A. Kite, to January, 1853, 1 00
Geo. W. Houston, to January, 1853, 1 50
Jas. Jack M'Bride, to January, 1853, 1 00
Jos. W. Culton, to January, 1853,
Maj. Jonathan Brooks, to Jan. 1853,
Saml. Willson, to January, 1853,
Zacharia Johnston, to January, 1853, } 6 42
James C. Wilson, to January, 1853,
Mrs. F. M'Chesney, to January, 1853,
Dr. Jas. Stuart, to July, 1852,
John R. Miller, to January, 1854, 1 00
W. H. Finch, to January, 1852, 6 00
Wm. Waring, to January, 1853, 1 00
Wm. W. Gilmore, to January, 1853, 2 00
John Tabb, to January, 1854, 3 00
Henry Hughes, to January, 1853, 1 00
Dr. John P. Tabb, to January, 1853, 1 00
Col. J. A. Whitaker, to January, 1854, 8 00
Dr. J. M. Garnett, to January, 1853, 1 00
R. M. Garnett, to January, 1853, 1 00
David Hancock, to July, 1852, 1 00

SANDY POINT FOR SALE AT AUCTION.

THE undersigned, prevented by engagements requiring his undivided attention elsewhere from residing on his farm, will sell publicly, unless previously sold privately, (and of which due notice will be given,) at the Bollingbrook Hotel, in Petersburg, on Wednesday, the 26th day of May next, at 11 o'clock, A. M. without reserve or regard to weather, that valuable, highly improved and heavily timbered estate, known as SANDY POINT, situated on James River, in the County of Charles City, Virginia, 45 miles below the City of Richmond, and 32 miles below the City of Petersburg.

This fine body of land contains 4,453 acres, and has been advantageously divided into four well located farms, with dwellings, commodious barns, &c. and into five valuable lots of timbered land, exclusive of an ample allotment of wood and timber for each farm.

Persons desirous of investing in lands of a quality not often in market, are invited to examine this estate.

Printed bills giving the qantities in the subdivisions, &c. will be furnished, and accurate plats exhibited to applicants.

Possession given of the timbered lands immediately after sale; of the farms, at the end of the year, with the privilege of fallowing and seeding wheat.

TERMS—One-fifth cash; balance in five annual instalments for the farms; for the timbered lands, one-third cash and three annual instalments; credit payments to bear interest, and to be secured by deeds and approved endorsed negotiable notes or bonds.

R. B. BOLLING.

Address to Petersburg, Va.

fe—tf PANNILL & SONS, *Aucts.*

ANALYSIS OF SOILS, &c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va.

FRUIT AND ORNAMENTAL TREES AND SHRUBS.

THE Subscriber offers for sale a select assortment of Fruit and Ornamental Trees and Shrubs, a number of new Evergreens, and a good collection of Greenhouse Plants, especially of Camellias, Roses, Geraniums; also, Dahlia Roots, Pœonias, with Bulbous Roots, Garden and Flower Seeds, &c.

All orders thankfully received and promptly attended to. Prices moderate.

The subscriber is commencing a Nursery for the growth of Fruit and Ornamental Trees and Shrubs, in which the greatest care will be taken to grow only those fruits that are adapted to the climate; and all will be worked on seedling stocks. The subscriber has secured the services of an experienced Nurseryman, and thinks he will be able to supply those who may favor him with orders with good Plants at reasonable prices.

Catalogues will be published soon and can be had on application.

ja 3t JOSEPH RENNIE.

COMMISSION HOUSE IN RICHMOND.

WITH the view of giving our friends and all others who may favor us with their patronage, the advantages of both markets, we have established in the City of Richmond a house for transacting a General Commission Business, to be conducted by TAZEWELL S. MORTON, under the style of TAZEWELL S. MORTON & Co.

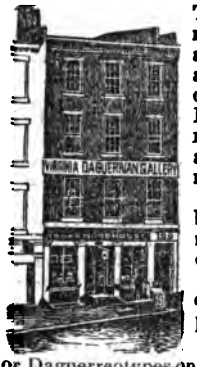
The business of WATKINS & MORTON, will be conducted in Petersburg by SAMUEL V. WATKINS, assisted by JOHN A. MORTON, as heretofore.

It is our purpose to adhere strictly to the Commission Business; giving our undivided attention to the sale of the staple products of the country, viz: Tobacco, Wheat, Corn, Flour, Cotton, &c.

We return our thanks for the liberal patronage that has been bestowed on our concern in Petersburg, and to the dealers in produce and merchandise in that city we feel under many obligations for the generous liberality and punctuality we have at all times met with in our transactions with them.

TAZEWELL S. MORTON & CO.
Richmond, Va.
WATKINS & MORTON,
ja 3t *Petersburg, Va.*

NEW STYLE MEDALLION DAGUERREOTYPES IN COLORS.



This splendid improvement must be seen to be appreciated. Our friends are invited to call at the original VIRGINIA SKY-LIGHT DAGUERREAN GALLERY, where may be found all the latest improvements, consisting of the

CELEROTYPE,

by which infant children may be taken in one second;

TALBOTYPE,

or Daguerreotype on Paper, and

HYALOTYPE,

or Daguerreotypes on Glass, which, with every other improvement, may now be obtained at the Gallery, No. 139 Main street, above Governor.

N. B.—Their NORTHERN COMBINATION SKY LIGHT is now open in full operation—it is the largest in the State.

WM. A. PRATT & CO. Proprietors.

MEDALLION DAGUEREOTYPES IN COLORS.—We have inspected the above style of Daguereotypes, lately and so successfully introduced here by Messrs. PRATT & Co., 132 Main street. By this process, a relief almost magical, and a variety highly pleasing, is obtained. In some cases, the picture so closely resembles an enamelled miniature, in its ivory tone, as to deceive even an artiste; in others from the midst of a dark back ground, appears the "human face divine," in all the vividness of life; then, by still another process, the picture appears entirely upon a brilliant white ground, surrounded by wreaths of flowers. But, we feel our inability to do full justice to these beautiful medallion Daguereotypes, and must, therefore, request the curious in such matters, to call and judge for themselves. Messrs. Pratt & Co. claim to be the first to introduce the sky-light system into the State, and appear to be constantly inventing something for the improvement of the art. Repair to their gallery and "secure the shadow ere the substance fades."—*Richmond Times.*

BOOKS, PIANOS, MUSIC, &c.

NASH & WOODHOUSE, Wholesale and Retail Dealers in BOOKS, PIANO FORTES, STATIONERY, MUSIC, &c. 139, Main St. Richmond, Virginia.

Constantly on hand, a full supply of standard AGRICULTURAL WORKS.

oct—tf

OSAGE ORANGE PLANTS FOR HEDGES.—A few thousand raised by myself, for sale.

WM. H. RICHARDSON.
Richmond, Jan. 1, 1852.—3t.

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PIEDMONT FEMALE SEMINARY.

THE subscriber will open a Female School at his house, near Gordonsville, on the 15th of January. He has already engaged a teacher of unquestionable qualifications. His terms per session of 10 months will be $120, for board and tuition in all the English branches, and in the French language. An additional fee of $30 will be charged for music.

de—3t* JAS. W. GOSS.

OSAGE ORANGE SEED,

SAVED with great care, and received direct from the region where it is grown, of reliable quality. For sale by

L. S. HOYT,

de—4t 55, Water st. New York.

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

STOCK Cattle of all the different breeds, Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged. Apply to

AARON CLEMENT, *Philadelphia.*

Refer to Gen. W. H. Richardson, Richmond, Virginia.

N. B.—All letters, post-paid, will be promptly attended to. ap—tf

GREAT REDUCTION IN PRICES OF HATS AND BOOTS.

J. H. ANTHONY'S FASHIONABLE HAT STORE, *Columbian Hotel Corner.*

THE cheapest place in the city of Richmond to buy HATS and BOOTS is at the above store, where every article sold may be relied on as represented. By this means he has gained a good run of custom, and his customers feel satisfied. Below is a list of his prices, which will be strictly adhered to:

Best quality moleskin, - -	$3 50
Second quality " - -	3 00
Best quality silk, - - -	2 50
Second " " - - -	2 00

Fine Calfskin Sewed Boots only three dollars and fifty cents.

Also, CAPS, SHOES and UMBRELLAS.

J. H. ANTHONY has made an arrangement with one of the best makers in the city of Philadelphia, to supply him with a handsome and substantial Calfskin Sewed BOOT, which he will sell at the unpreecedented low price of three dollars and fifty cents. The attention of gentlemen is respectfully solicited, as they are the best and cheapest Boots that have ever been offered for sale in this city. He intends to keep but the one kind, and sell them at one price. se—1y

THE RICHMOND AND PETERSBURG RAIL ROAD COMPANY respectfully inform farmers living on the Roanoke River and on the line of the Raleigh and Gaston Rail Road, that they are transporting tobacco and other produce between Richmond and Petersburg with promptness and despatch, running daily trains of eight wheel covered cars, securing tobacco and goods from damage. Tobacco consigned to the care of J. Lynch, Rail Road Agent, Petersburg, will be forwarded, free of commissions, to Richmond. Goods purchased in Richmond and consigned to the Rail Road Agent at Gaston will be forwarded up the river without charge for forwarding.

THOS. DODAMEAD,
Sup't R. & P. R. R.

June 24, 1851—tf

VIRGINIA AXES.

THE undersigned, in connexion with their Rolling Mill, have erected an extensive Manufactory of Axes, Hatchets, and Tools generally, which they warrant equal to any manufactured, and offer at Northern prices. They solicit the patronage of the agricultural community.

R. ARCHER,
A. D. TOWNES,
R. S. ARCHER,
C. DIMMOCK. } R. ARCHER & CO.

oct—1y

BOOK AND JOB PRINTING executed at this Office with neatness and dispatch. Office South Twelfth Street.

ADDRESS

Of Hon. Willoughby Newton, before the Virginia State Agricultural Society, delivered in the Hall of the House of Delegates on Thursday evening, Feb. 19, 1852.

MR. PRESIDENT AND GENTLEMEN:

It is not my purpose, to-night, as many of you may perhaps suppose, to speak of practical agriculture. I appear before you, in obedience to the call of your Executive Committee, to discourse of other themes; and I shall be most happy if, with the brief period allowed me for preparation, I shall be able to discharge the duty assigned me in a manner at all acceptable to myself, or in the least degree worthy of this large and enlightened audience.

The occasion which brings us together is one of deep interest to the entire Commonwealth. After years of vain and fruitless effort, and mortifying disappointment, the friends of agriculture are again assembled, I trust, under better auspices, with the hope of establishing, on a permanent basis, a State Agricultural Society, which shall endure for all time, and dispense its blessings to generations yet unborn. The signal failure of all former efforts to arouse the attention of Virginia to the importance of this great subject would deter me from attempting the difficult task, if we were not now surrounded by circumstances that cheer us with new hope, animate us with fresh zeal, and give us, indeed, an assured confidence of the ultimate success of this noble enterprise.

The great civil revolution through which we have just passed has, I trust, obliterated forever all traces of the former differences between the various sections of the Commonwealth. The strife is ended; and whatever may have been our feelings or convictions of right and duty, we of the east no longer brood over our griefs, but are resolved that all our jealousies and heart-burnings shall be forever buried. Now, no Tweed divides a kindred people. The mountain barriers are broken down, and with them the conflicting interests that seemed to sever a people always in heart united. Amidst the greatest excitement, in the very tumults of passion, the hearts of our people have always been right. At no moment has that generous affection which binds brother to brother, ceased to burn in their bosoms. Let the safety, interests or honor of Virginia be menaced from any quarter, and all domestic feuds are forgotten, and the only rivalry that remains is, who shall render the most efficient service, in repelling the common foe. Whether that foe be a foreign power invading our coast, or a domestic enemy assailing our peace and property, we feel that when Virginia calls we have no surer ally than the hardy pioneer of the west.

> "Bravest of men, his flocks and herds are safe,
> Remote from war's alarms, his pastures lie,
> By mountains inaccessible; secured,
> Yet foremost he, into the plain descends,
> Eager to bleed, in battles not his own."

The Society, which we propose to establish, is to be as broad and comprehensive as the Commonwealth itself. Every section and interest of the State will here be represented. The grower of wheat on the banks of the Potomac will here meet the planter of tobacco from the distant Roanoke; and the tiller of corn, who greets the first beams of the morning sun from the golden waves of the Atlantic, will hail his brother who catches its parting ray as it is reflected from the glassy bosom of the beautiful Ohio.

If such an association were productive of no other good than bringing together citizens of distant quarters of the Commonwealth, its benefits would be incalculable. It would remove prejudices, increase our State pride, and enlarge our knowledge of the resources of the Commonwealth, both intellectual and physical.

There is no department of human industry in which the knowledge of inventions, discoveries and improvements, seem to travel so slowly as in agriculture. Manufacturers, congregated in cities and towns, are quick to learn whatever will facilitate their labors and add to their profits; whilst farmers, living in a state of comparative isolation, often remain for years ignorant of the greatest improvements. Thus, M'Cor-

mick's Virginia Reaper, an invention of one of our own citizens, almost perfect in itself, and admirably adapted to the wants of the country, remained for ten years unknown to ninety-nine hundredths of our farmers, and was only brought to the notice of many of them by its astonishing success at the London Exhibition. And so ignorant are even the best informed men in England in regard to the advance of improvement in this country, that there appeared, not very long since, in the London Quarterly Review, an elaborate article on Roman agriculture, in which it was maintained that in some respects the Romans had the advantage of the moderns; especially citing their reaping machines as an instance, the Romans having had a clumsy contrivance for this purpose, not drawn, but propelled by horses, whereas there had not been in modern times an approximation to any thing of the kind! At this very time the reaper had been in successful operation in the west for ten years at least, and was moving in triumph in some of our fields in Virginia, with the steadiness and precision of an army with banners. Its successful exhibition at the World's Fair brought the merits of this wonderful implement at once to the notice of the British public. And who can estimate the immense value to Great Britain of the knowledge thus acquired? It is thought to be more than equivalent for the whole cost of that splendid pageant.

Richmond is remarkable for the extraordinary excellence of her agricultural machinery. Her axes, ploughs, corn shellers, threshers and horse powers, are not surpassed, if equalled, by any in the Union. But how limited is the knowledge of this fact, which was only lately brought to the notice of the general public by an intelligent traveller, a correspondent of an agricultural journal, in a neighboring State. How soon would an agricultural exhibition disseminate this knowledge, and cause the admirable manufactures to take the place of the worthless implements that now find their way into every corner of the State. The same course of remark will apply to Alexandria, Fredericksburg, and other towns, in which there are, doubtless, many skilful and enterprising mechanics and artisans.

Such an association would not only thus benefit the whole community by its annual exhibitions, but it would be the means of spreading agricultural knowledge far and wide, by conversational meetings, public addresses and practical essays, that would doubtless be elicited by the Society. These advantages are so obvious, and have been so strikingly illustrated by the eminent success of the New York and Maryland Agricultural Societies, that it must be entirely unnecessary to enlarge upon them.

The inquiry naturally presents itself, why is it that these advantages have so long been neglected, and no successful effort has yet been made in Virginia, to establish, on a permanent foundation, a State Society?

I propose briefly to discuss this question, with the hope that when the causes of our former failures are ascertained, the chief difficulties in the way of our success will be removed.

The dispersion of our people over an extensive territory, indented by numerous rivers and separated by mountain ranges, has heretofore rendered it almost impossible for them to meet in any considerable numbers at any accessible point, for the accomplishment of a common object.—Hence, most of the agricultural meetings have been held during the winter, in the hope of making them respectable in numbers by recruits from the members of the Legislature and such strangers as business or pleasure may draw to the capital, during that gay season. My experience in public bodies satisfies me that this policy has been injudicious. The human mind is so constituted that it cannot be occupied by two exciting and important subjects at once, and of all things, politics and agriculture are the most incompatible.

These meetings have thus been subordinate, and not principal objects of attraction, and have consequently failed to excite an interest in the public mind. This, perhaps, has been heretofore unavoidable; but may we not confidently hope that the increased facilities for extending her trade, which the city of Richmond will soon enjoy, will stimulate the public spirit of her merchants to engage largely in foreign commerce, and thus supply the people of the State with the imported goods for which they are now in a great measure dependent on the north? Should our hopes in this respect be realized, and the magnificent schemes of internal improvement, shadowed forth in the message of the Governor, and more elaborately developed in the report of the Board of Public Works, be carried out, we shall not only have an object to attract us to the capital, but abundant facilities for reaching it from all quarters, at all sea-

sons of the year. We shall then be no longer under the necessity of holding our meetings in winter, when the public mind is absorbed by politics, and the enthusiasm of the farmer is chilled. A more genial season will be selected, when Nature smiles upon the labors of the husbandman, and his hope is excited by the promises of spring, or his heart warmed with gratitude by the glories of autumn. At such a season its meetings would be largely attended and the Agricultural Society of Virginia become one of the most useful and attractive in the Union.

Besides this mere physical difficulty, which will probably soon be removed, there have been other causes of failure, moral and intellectual, still more operative.

Of these, none has been more efficient than the desponding tone in which it has been the habit, until very recently, to speak of the prospects of agriculture in Virginia. Hope strengthens the feeblest, whilst despair unnerves the stoutest arm. Nothing good, or great, or glorious was ever yet achieved, without the inspiring influence of hopeful confidence. Many of the agricultural conventions of Virginia have been held under the most depressing circumstances. In a season of gloom, when the tide of emigration seemed to threaten the depopulation of the State, our wise men and patriots, terror stricken and appalled, at the prospect of approaching desolation, have come up to the capital, in the spirit of the disheartened population of a beleagured city, crying, All is lost! all is lost! What shall be done? what shall be done?

Is it wonderful that they failed to meet with coöperation? What motive could there be for zeal in a cause deemed utterly hopeless? What chance of concerted action in favor of an employment of capital that it was confessed yielded only half the ordinary rate of profit? We had been told from the chairs of political economy in our colleges that three per cent. was the fair rate of agricultural profit in Virginia. You could scarcely take up an encyclopædia, gazetteer, geography, or any work on the progress of the nation, in which the same doctrines were not taught, if not in terms, at least by implication. We were told that poor old Virginia, especially Tide Water Virginia, was utterly exhausted, and "must be abandoned for years, until restored to vigor by the recuperative powers of Nature, or transferred to another population, better qualified to recover it by art and industry!" Our best friends, at home and abroad, indulged in the same tone of despondency. Mr. Calhoun, at the festival at York, in honor of Lafayette, when called upon for a sentiment, gave, "Virginia, like the mother of the Gracchi, when asked for her jewels, points to her sons." He could say nothing, as he afterwards intimated, in favor of her public works, manufactures, or agriculture, all of which he regarded as in a hopeless condition.

I trust the day is far distant when this beautiful compliment shall be undeserved—that the time will never come when the best product of Virginia shall cease to be men, "high-minded men, that constitute a State." Rather than this, let her be reduced to utter barrenness. Let it be said of her, as of Switzerland—

"No product here, the barren hills afford—
But men and steel, the soldier and his sword."

Yet, it does not the less become us to vindicate her claims to other productions, to spread the truth before the world, to encourage our people to renewed efforts, and to induce the rising generation to remain within her borders, to develop her vast resources, and to reap the rich harvests which she bountifully offers them.

I, therefore, invite you to a more cheerful view of our affairs. Cast your eyes upon the map of Virginia, extending from the ocean to the Ohio, penetrated by innumerable navigable rivers, diversified by hill and dale, with a climate mild and salubrious, and a soil suited to the production of all the staples essential to the comfort of man and beast, and ask yourselves, if there be a spot upon the habitable globe, of equal extent, possessing equal advantages.

An intelligent friend, who had travelled much in the United States, and was particularly familiar with the fertile States of the west, remarked to me, a few years ago, "that he had no doubt there was more good land at that day, in proportion to territory, in Virginia, exhausted as she was, than in any State in the Union." This opinion is rendered unquestionable by the only authentic data within our reach, the returns of the census of 1850. By these returns it appears that in 1849 Virginia was the third wheat producing State in the Union, Pennsylvania being the first and Ohio the second, but neither being much in advance of Virginia, which, relatively to population, far exceeded them both. It should be borne in mind, that wheat is the principal staple of Pennsylvania, whilst Virginia produces for export

large quantities of tobacco and Indian corn. When, in addition to this, it is recollected, that Pennsylvania has been, for more than half a century, under an ameliorating system of husbandry, whilst in Virginia no general attention has been given to improvement until within a very few years, no doubt can remain of the great natural superiority of Virginia. The census report, too, is of the crop of 1849, at which time the influence of the concentrated manures, now so generally used in Virginia, was scarcely felt. The crop of that year was fourteen million five hundred and sixteen thousand nine hundred and six bushels. From my own observation and extensive inquiry I am satisfied that the crop of 1850 in Eastern Virginia, exceeded that of 1849 at least twenty-five per cent. and the crop of 1851 was, in the same proportion, larger than that of the preceding year. My own crop of 1850 exceeded that of 1849 by more than one hundred per cent. and the crop of 1851 was greater by twenty-five per cent. than that of 1850. I think there can be no doubt that the crop of last year exceeded twenty millions of bushels, and that Virginia may now be put down as the first wheat growing State in the Union, not only relatively but absolutely. There can be no better test of the value of land than its capacity to produce wheat, and taking this as the criterion, our poor old worn out State is certainly not inferior to any in the Union, old or new.*

In Eastern Virginia the career of improvement may be said to be but just begun. We are scarcely in the full tide of successful experiment, yet the striking fact, communicated in the Governor's message, of an increase in the assessed value of the lands, of this section, of more than seventeen millions of dollars, or nearly thirty per cent. in twelve years, is well calculated to startle the croakers and to cause the compilers of statistics to commence figuring anew. This assessment, gratifying as the result must be considered, falls far short of the actual value of the lands; and their true increase in value cannot be rated at less than thirty millions of dollars.

It is very difficult to estimate the intrinsic value of land, and I would recommend to those who have a taste for such investigations, the perusal of a most remarkable essay of Dr. Black of Delaware, published in an early volume of the old American Farmer, in which the subject is treated with singular clearness and force. He maintains that land, being a permanent investment, is intrinsically worth that sum the annual interest of which it will continue to pay in all time, after deducting all the expenses of manuring and cultivation. Taking this principle as correct, which seems to be founded in right reason, the assessment of many of our farms is much too low. The farm on which I reside, for example, which a few years ago cost four dollars per acre, was assessed, I believe, at eight dollars; yet it yielded, the last year, (to say nothing of the incidental profits necessarily arising from a farm on which a large family resides,) *a clear profit in cash*, after deducting all expenses of cultivation and manures, of six per cent. on sixty dollars per acre. And I have no doubt that, under the system now pursued, this profit will not only continue, but be largely increased, in future years. Nor is this an isolated case. Many of my neighbors, upon similar lands, made crops quite as good, and others much better than mine.

There was a time, Mr. President, when we of the east feared the competition of the west, and all schemes of internal improvement were indiscriminately opposed,

* The following statement, from the Census Report, may be relied upon as a near approximation to truth in relation to the wheat crop, which is probably accurately measured; but in regard to the corn crop, is entirely conjectural, most of it being fed upon the ground, and is, therefore, entitled to no reliance.

GREAT WHEAT AND CORN STATES.—A correspondent of the Pittsburg Gazette, writing from Washington, says:

"From the abstracts of statistical returns already prepared at the Census Office, it appears that Pennsylvania, in 1850, was the largest wheat producing State of the Union. I have had the curiosity to compare the six most prominent States in respect to this crop, and give them below, with the crop of each, as shown by the return:

Pennsylvania,	- -	15,482,191 bushels.
Ohio,	- - -	14,967,056 "
Virginia,	- - -	14,516,906 "
New York,	- -	13,073,000 "
Michigan,	- - -	4,918,000 "
Maryland,	- -	4,494,680 "

"In the yield of Indian corn, Ohio bears off the palm, or rather she stands *primus inter pares magnos*, for five States stand almost in a line in regard to this important staple. These States and their respective crops are as follows:

Ohio, bushels of Indian corn,		59,788,750
Kentucky,	" -	58,000,000
Illinois,	" -	57,000,000
Indiana,	" -	53,000,000
Tennessee,	" -	52,000,000

"The corn crop of 1850 for the whole United States is returned as over five hundred millions of bushels, a gain of about forty per cent. on that of 1840."

with a zeal quite sincere, but, perhaps, not always according to knowledge. That time is past. We will now endeavor wisely to direct what we have not been able to counteract. Press on, therefore, with vigorous but prudent zeal, your great works of improvement; reach the Tennessee line; tap the Ohio at as many points as you please, and pour down upon the markets of the east, the rich product of your teeming valleys and grass-clad hills. We invite you to a free and generous competition. Nay, more; connect your improvements with kindred works, in other States, until they reach the heart of the great west, and let her vast store-houses be emptied upon the ocean. Yet we shall not be appalled: confident in our own resources, we feel assured we shall be driven from no market in which others can sell with a profit.

Each section has its peculiar advantages; but survey this glorious Commonwealth in all its length and breadth, and tell me in what is it inferior to any of the States of this Union? In a race of brave men, and fair women, none claim superiority.

It is not mine to speak of her inexhaustible mineral resources, of her unfailing water power. We have seen that in the production of the most important of the cereals, she surpasses them all. Her tobacco finds a market in every quarter of the world, where the "weed" has a votary. Her Indian corn is not surpassed, except in that fabulous grain growing region, where the half bushel is discarded, and the only measure is an exuberant imagination. Her horses are equal to the English and superior to the Arab. Hers are "the cattle on a thousand hills." Her wool exceeds in fineness that of Spain or Silesia, and her flocks need only legislative protection from pestilent curs, to compare in numbers with the leaves that in autumn strew her valleys.

These remarks are made in no boastful spirit. Our people have been discouraged. I desire to banish their discontent. And, indeed, we have been so long decried by others that I think it high time we were standing up for ourselves. We have, in truth, Mr. President, "a goodly heritage," and are false to ourselves, and unworthy of the fame of our noble ancestors, if we lack the energy to improve, or the courage to defend it.

Another prominent cause of the failure of all concerted efforts for the improvement of agriculture in Virginia may be traced to an erroneous opinion, extensively prevailing, as to the character and value of our agricultural labor. Originating at a very early day, (perhaps with Mr. Jefferson, who, however wise as a statesman, was not remarkable for the depth of his philosophy, or the soundness of his practical views,) this error soon became general. The doctrine was taught by philosophers, statesmen and political economists, that slave labor was ruinously expensive and unproductive to its owners, and wherever employed, carried barrenness and desolation in its train.

Whatever evils we endured, whether arising from a natural defect in our soils, which no labor could correct, but for which modern science has found a remedy, or from low prices, consequent upon a derangement of the currency, or a general peace in Europe, were attributed to this fruitful source of all our woes. And when, to these causes of discontent, was added the unfortunate disturbance in Southampton, not comparable in its extent or violence to an emeute in Paris, or a theatre mob in New York, or a fireman's riot in Philadelphia, a panic seized the public mind, and madness ruled the hour. The whole vocabulary of epithets was exhausted in denunciation of the hated institution, and the most striking pictures of the decadence of Virginia, which a heated imagination could paint, were profusely scattered through the land. Men of virtue and intelligence in her public councils, seemed to vie with each other in the extravagance of their denunciations. Her gullied hills and wasted fields were apostrophized, and her sighing pine tops invoked to chant a requiem over the departed glory of Virginia. Is it surprising that these views, thus expressed with all the earnestness of feeling and of eloquence, should have deeply impressed the public mind? The consequence was, a general spread of discontent—a feeling that slave property was insecure, and that emancipation, either immediate or prospective, would, sooner or later, be resorted to, as a remedy for the supposed evils under which the Commonwealth was suffering. How far the agricultural interests of the State were retarded by the memorable scenes of 1832 it is vain now to speculate. I rejoice to know that reason has resumed her empire, and that many of the most distinguished actors in that remarkable drama have renounced their former errors.

This subject is too comprehensive and important to be discussed, as a mere incidental topic, in an annual address, and I trust that some gentleman of the Society, of competent talents and information, will, at an early day, thoroughly investigate it, and furnish an essay on the necessary connection between the institution of slavery and the progress of agricultural improvement in Virginia.

The institution of slavery is a fixed fact; and as wise and practical men, it is our duty so to regard it. Emancipation is an idle dream, beyond the reach of human power. Its accomplishment, if it were possible, would be the overthrow, not only of all the material interests of the south, but also of the great fabric of modern civilization. Let us be content with our condition. We have a class of laborers, tractable, efficient and profitable. Without them, Virginia would be a wilderness; with them, we may defy the competition of the world. It is not for us, in the indulgence of a mistaken sensibility, to call in question the wisdom or beneficence of the great Author of our being. Let the institution go on to fulfil its mission; and when, in the providence of God, that has been accomplished, the same Power that opened the waters of the Red Sea, for the exodus of the Israelites from the land of Egypt, can make dry the waters of the great deep, for the passage of the African to his native shores.

Age may counsel, and wisdom may direct, but no great enterprise was ever yet accomplished without the enthusiasm of the young. This we have, heretofore, failed to secure. Nor is this wonderful. The cheerless pictures that have been presented, of the prospects of agriculture, were far from captivating to the imaginations of youths, who, leaving the seminaries of learning, with a high appreciation of their powers, have come into the great world, with a determination to carve their own way to fame and fortune. The policy of the State has caused them to be instructed in every science save that which would be most useful. They come into active life, entirely ignorant of the principles of agriculture, and turn with contempt from a calling, in which they suppose the unlettered rustic can be quite as successful as themselves. They press into the professions, already crowded to suffocation, or try their fortunes in the precarious trade of the politician. It would afford an instructive, though a melancholy lesson, if we could follow the progress of the army of aspirants that have left our colleges in Virginia during the last thirty years, full of hope and expectation, to battle with the world. How many have fainted by the way-side! How many, chafed by disappointment, have turned their backs upon their native homes, to seek in distant lands, what may never be attained! How few have reached the goal of their ambition!

This deplorable waste of talent and energy must be arrested. New ideas must be infused into the old, and new tastes formed in the young. Happily, this process has commenced, and I trust will rapidly extend. Many of our enlightened farmers are showing, by the balance sheet, that the profits of agriculture, in Virginia, are more certain, and quite as large, as those of any other legitimate business. And the demand for scientific knowledge connected with our profession, has been so great, that the University, and some of our principal colleges, have, in deference to public opinion, instituted a course of lectures on agricultural chemistry. This is a gratifying commencement, but falls far short of that comprehensive system of instruction demanded by the spirit of the age.

If my humble voice could reach the throng of noble youths that now crowd our halls of learning, buoyant with hope and panting for distinction, I would point them to our neglected agriculture as the most promising field for the exercise of their talents and the gratification of an honorable ambition. The vast resources of Virginia only await your efforts for their development. With a territory capable of supporting, in comfort, a population of two hundred, she has less than twenty to the square mile. Here is ample room and verge enough for the exercise of all your talents, and, unlike other professions, the greater the competition the greater the profit, in the improvement of the common inheritance of all. Science woos you to her embrace, and an honorable independence and an enduring fame offer themselves as your rich reward. Will you prefer the uncertain conflicts of the bar, or the thorny paths of party politics? What do they offer in comparison with the substantial blessings enjoyed by every enlightened and successful farmer? What do you find in the history of our public men to charm and captivate you? Few have acquired fortune, many have sacrificed their independence; and if, here and there, one has attained to eminence, thousands have returned to their constituents,

like rain-drops to the ocean, never more to be distinguished from the common mass. Nor is agriculture without her triumphs. Ancient history presents many names, illustrious because of their connection with the rural arts. I need not recite them. In modern times what statesman has achieved a more solid reputation than Sinclair, Coke or Arthur Young? In our own State, *Arator* will live when the author of Construction Construed and the Enquiry shall be forgotten. And among all the eminent living statesmen of Virginia, who have, with toil assiduous, climbed the steep ascent of fame, is there one who has attained a reputation as extensive and enduring as the unpretending author of the Essay on Calcareous Manures?

The last cause of disappointment to which I shall refer is the fact, that we have not heretofore been sustained by the cordial coöperation of the Legislature.—Other States have established agricultural schools and societies, with munificent endowments, appointed chemists, geologists, and boards of agriculture, and have manifested by every means in their power, a deep interest in the success of this the most important of all industrial employments. The Legislature of Virginia, amidst this universal progress, has heretofore looked on with listless indifference, as if unconscious of its duties, or unwilling to perform them. Standing here to-night, in the capitol of the State, honored as I am by the presence of many of the representatives of the people, may I be pardoned for inquiring, if this state of things, so injurious to the interests, and so unworthy of the renown, of this great Commonwealth, will be permitted longer to continue? I trust not. The friends of agriculture, here assembled, will doubtless soon present to your honorable body, their reasonable requests. Without anticipating them, I may safely assure you, that they will be such as it is not unbecoming in them to make, or in you to grant. They may ask some efficient legislation for the protection of the rights and interests of agriculture. They will, doubtless, ask an appropriation of money, to be applied to various objects, eminently useful. The wisest economy requires that you should not deny them this. Besides the general benefits that it would diffuse through the Commonwealth, you will receive back into the treasury, at no very distant day, ten dollars for every one that you may appropriate to this object. You have seen that your revenue has received a permanent addition of more than seventeen thousand dollars under the new assessment of the lands of Eastern Virginia alone. This gratifying and unexpected result is mainly attributed, by our patriotic Chief Magistrate, to the unaided efforts, of comparatively a few zealous and intelligent farmers, scattered through the country. What may not be expected, when the countenance and protection of the State government are given to this great interest, and the attention of the whole people aroused to its high importance? Under this fostering influence, the next decade will probably show a farther enhancement in the value of the lands of this section, equal to thirty millions, and a farther increase of your revenue to the extent of thirty thousand dollars, from this source alone. Am I not warranted, therefore, in saying, that wise economy demands this appropriation?

And now, Mr. President, fervently imploring the blessings of a kind Providence on all our endeavors, I appeal to the farmers, throughout the Commonwealth, to come up to this great work, with an ardent and enlightened zeal. I call upon the representatives of the people to do their duty to the Commonwealth and their constituents. I invoke the cordial coöperation of men of all parties and occupations—gentlemen of the learned professions, enterprising merchants, and industrious artisans. I call upon the press, to lend us its mighty influence; upon the old, to give us the benefit of their wise counsels; on the young, to lend us their ardor and enthusiasm; and, finally, sir, in behalf of this noble enterprise, I invoke the potent influence of woman. I call upon the mothers, wives and daughters of Virginia, to encourage, by their countenance and cheering smiles, a calling which crowns the daily board with abundance, and diffuses peace, and happiness, and joy around the domestic fireside.

ADDRESS

To the Virginia State Agricultural Society, on the Effects of Domestic Slavery on the Manners, Habits and Welfare of the Agricultural Population of the Southern States; and the Slavery of Class to Class in the Northern States, by Edmund Ruffin, President of the Society. Read at the First Annual Meeting, in the Hall of the House of Delegates, December 16, 1852.

MEMBERS OF THE VIRGINIA
STATE AGRICULTURAL SOCIETY:

Upon this occasion of the first annual meeting of your body since its organization, and also in conformity with time-honored usage, it is probably expected that something will be said by your presiding officer, laudatory of the past labors, or in hopeful anticipation, thence deduced, of the future prospects of the Society. It is not in my power to apply any such "flattering unction." The efforts of the Executive Committee, and the few other members who have labored to promote the objects of the Society, have not been seconded by much the greater number of actual members, well qualified to render good service; still less have they had the aid or sympathy of the great agricultural community; and our objects and efforts have had neither aid nor countenance, nor even notice of the Legislature of Virginia. In the past session of five months' length, the Legislature did not find time to give the slightest consideration to, still less to act upon, the petitions of this Society, for aid to agricultural instruction and improvement. Even the taxes levied upon agriculture, through the pretended and delusive legal inspections of manures, for relief from which the assemblage of farmers which formed this Society unanimously petitioned, not only still remain in force, but our petition for their repeal has not received the slightest consideration.

We may, and ought to continue to urge the affording of that governmental aid which is justly due to agricultural instruction and improvement. But is not to be disguised that there is but little ground for hope of obtaining such aid from the Legislature of this almost exclusively agricultural commonwealth, which has never yet granted as many single dollars to promote this incomparably the greatest of all public interests, as it has squandered thousands, perhaps millions, for private interests and visionary schemes, and even jobs for selfish and predatory individual interests, under the specious but deceptious guise and name of public improvements and promotion of public interests. The former abortion of a Board of Agriculture, and the recently still-born enactment of an Agricultural Commissioner and Chemist, (enacted, but remaining suspended,) do not deserve to be named as exceptions to the general rule of total neglect of all agricultural improvement and interests.

Perhaps it may be considered as at least impolitic for me, in this place, to express these plain truths. The utterer only and individually is responsible for them, and they cannot be charged to the Society. But in any case, no harm can result from thus stating the truth. Whether, like the idol-worshipper of the ancient fable, we continue to pray to a deaf and wooden deity, or abuse and maltreat it, in either case we will obtain nothing for our object.

Still, if we, the members of this Society, perform faithfully the duties we have undertaken, there is no reason for despairing of our cause. Few and weak as we are, in comparison to the numbers which the great agricultural community of Virginia ought to supply, and even if still continuing without aid or countenance of the government, we alone can render important services to agricultural improvement and progress. All that is necessary for this great and beneficial result, is that each member shall contribute his individual useful knowledge to the general stock. Let but this be done, and we shall do well—even though unaided by the far greater number of our as intelligent and capable brother farmers, and still utterly neglected, in common with all other agricultural claims and interests, by the Legislature of our country. I earnestly invite and urge each one of you all to determine so to act. As an individual member, and in the private capacity in which only will henceforth be my service, I pledge myself to strive thus to labor to promote the great and noble object of our Association, so long as my fast-failing powers, of both body and mind, may permit, and enough fellow-laborers shall continue to aid and further the good work.

Without farther reference to this Society, or its members, I will proceed to more general considerations. The subject upon which I propose now to offer my opinions and remarks, though not strictly agricultural, is of the highest degree of interest and importance to the whole agricultural community of this and the other southern states of the confederacy. This is, the influence of the institution of domestic or individual slavery on manners, intellect and morals, and on the welfare of both masters and slaves; and in these respects compared to the influence of the slavery of class to class, which, in one or other form, either now prevails, or soon will occur, in every civilized country where domestic slavery is not found.

The institution of domestic slavery, its effects, influences and probable consequences, constitute the great and all-absorbing subject of discussion at the present time—of defensive and too often apologetic argument in the southern states, and of aggressive and fierce denunciation throughout the northern states of this confederacy. The subject is as broad and varied as it is important. To be fully discussed it would require consideration in sundry aspects, but of which each one may be treated separately and distinctly. The expediency and rightfulness of slavery may be considered either as a question of religion and morals—of public policy and political influence—or of domestic economy and influence upon private interests and on the habits and manners of society. The former and chief branches of the general question have been already discussed by able writers, to whose arguments I could add no light, even if this occasion permitted so wide a range of discussion. But the latter-named branch has had less attention, or defence, on our part; and as its consideration is intimately connected with agriculture and agricultural interests, in this connection mainly, and as suitable to this occasion, I will now offer some remarks upon the influence of the existing institution of African slavery, on the social qualities, manners and welfare of the agricultural class in these southern states.

This one and limited relation of slavery to agricultural interests, requires a still further division, into 1st: The question of the comparative pecuniary profit of slave labor, or of its absence and its substitutes; and 2d: The question of social and moral advantages and disadvantages. The first of these subdivisions, important as it is to our interests, and certain and easy as would be the demonstration of the result, cannot be here discussed. The superior pecuniary profit of slave-labor is a subject of statistics, of calculation and detail, which would be inadmissible at this time and place. But it is not required to reach the proof through such a course of argument. I may assume as granted and unquestionable, the fact almost universally admitted in the southern states, that slave-labor is in our circumstances, more profitable to the employers, and to agricultural interests, than could be any possible substituted labor. Dismissing, then, this important subdivision of this subject as settled, I will direct my observations to private interests other than pecuniary, as affected by the influence of the institution of slavery.

It has been a fertile subject of declamation and denunciation among the opposers of slavery, that the existence of domestic slavery operated to corrupt manners and morals. Every wide-spread and pervading institution, however beneficial in general effect, must also have some adverse effect or influence in minor points, or exceptional cases. This is true in regard to slavery, as it is in regard to every great institution of public economy, government, morals or even religion. He is a poor reasoner who judges not by general rules, but by the exceptions. And that is the mode of argument generally adopted to oppose and denounce the institution of slavery. The so-called facts or premises, if not either entirely false and impossible, as is generally the case, are but rare exceptions to general rules.

The great economical objections to slave-labor are these: The compulsion of authority, and the fear of punishment, to the slave, are less potent than the pressure of want, and desire of gain, stimulating free laborers. Hence slaves labor less assiduously than necessitous free laborers. Next, with all this loss of effort, still the labor of slaves is so profitable that their owners are tempted by their prosperity and the ease of obtaining a living, to be themselves indolent and wasteful. These are effects which every where follow similar causes. Their existence is certainly a great detraction from what might otherwise be the profits of southern agricultural industry and capital. But when this detraction is urged (as is continually done) by the opposers of slavery to prove the evils of the system, they are in fact but asserting the truths that the labors of the southern slaves,

in general, are lighter, and yet the profits of their owners greater, than in regard to the corresponding classes of laborers and capitalists in Europe or the northern states. Northern farmers who are now thriving by greater economy of labor and products, would become bankrupt if subjected to the waste of both, which is general throughout the southern states. These evils are the effects certainly of slavery—but effects which are the strongest evidence of the greater benefits of the system, and of the falsehood of the charges against it, as a question of profit for the proprietors, or of oppression and suffering of the slaves.

Much is certainly wanting among the agricultural class of the southern states, in education and mental culture; and great have been and still remain the obstacles to the higher attainment of these benefits. This also is one of the attendant minor evils of the institution of slavery, caused by the necessary dispersed residences of the superior class of population. Still, in no other class of cultivators of the soil, whether in this young and great confederacy, or in old Europe, can there be found, in proportion to numbers, so much of mental improvement, enlargement of views, and general information, as in the southern and slave-holding states. In no other agricultural class, throughout the world, are better nurtured or so well preserved the purity of all the domestic and family virtues of daughters, wives and mothers. To the most intelligent and fair judging of foreign travellers and visitors to our southern country, who have had opportunities to observe domestic manners and country society—whether such visitors were natives of Europe or of our northern and slavery-hating states, nothing has seemed more marked and peculiar than facts observed, which were but illustrations of the propositions I have asserted, and necessary results of our peculiar social position. Yet it has not occurred to these intelligent strangers, who have admired and eulogised the domestic manners and refinement of the southern country population, that the main cause, the essential foundation of the permanence of the peculiar merits which they witnessed with surprise and admiration, are due to the institution of African slavery. It is this institution, which, by confining the drudgery and brutalizing effects of continued toil to the inferior race, (and of which the subjection, notwithstanding, has served greatly for its benefit and improvement,) gives to the superior race leisure and other means to improve mind, taste and manners. In countries where domestic slavery does not exist, (or some equivalent condition of society, such as I will advert to,) and where the owners of the soil and all members of their families are necessarily laborers in the lowest departments or most degrading menial services, there may be much industry, greater economy and frugality, and possibly, (under the peculiarly favorable, though transient circumstances of a newly settled territory and cheap and fertile lands,) there may be even much general accumulation of profit and of wealth. But, nevertheless, such a population, of necessity, must be, or in a few generations will become, rude in manners, and greatly deficient in refinement of feeling and cultivation of mental and social qualities. No one appreciates more highly than myself the advantages to a nation of producing and accumulating wealth by the individual members of the great community, and especially, as the greatest public gain, the increase of agricultural production and riches. To advocate and urge the forwarding of the latter results is the especial object of my present service and employment, as it has been one of the most important objects of all my public efforts and labors. Still, God forbid that we should deem the accumulation of wealth—even if from its most beneficial and best possible source, the fertilization and culture of the soil—as compensation for the loss or deterioration of the mental and moral qualities of southern men, and more especially of southern women! And if brought to the hard necessity of choosing between the two conditions, with their opposite disadvantages, I would not hesitate a moment to prefer the entire existing social, domestic and industrial conditions of these slave-holding states, with all the now existing evils of indolence and waste, and generally exhausting tillage and declining fertility, to the entire conditions of any other country on the face of the globe. Our country population would lose largely in grade by exchanging conditions with the industrious, economical and thrifty Flemish farmers—long and deservedly celebrated for the excellence of their agriculture, and who yet, beyond the routine of their regular work, are almost as uninformed as their most ignorant hired laborers. Far worse would be a change to the condition of the proprietary class of France, among whom land generally is so minutely subdivided, that its possession is usually accompanied

by all the toils and privations of day-laborers to the farmer and his family, and of course by the ignorance, coarseness of manners, and moral degradation, which are the necessary consequences of such unceasing toil, exposure and privations. In Britain, it is true, that with much of gross ignorance and rudeness of manners among the lower class of farmers, and with all the agricultural laborers, there are, in the higher classes, both of proprietors and tenants of lands, many persons of high intellectual attainments. But this exception to the general rule is owing to the almost universal mode of tenure of the landed property in that country, and the usual separation of its possession, as capital, by men of wealth and leisure, and the conducting of the cultivation by tenants upon rent. Even many tenants are men of wealth, who find it more profitable, as tenants, to conduct very large agricultural operations and capital, than the being proprietors of small farms, and upon a necessarily very limited scale of operations. These causes are there further aided in operation by the high price of land, which keeps it in the possession of the wealthy and educated, and also the great plenty and cheapness, and degradation, of agricultural labor—much cheaper in that thickly populated country than our slave-labor. Of these several conditions of British agriculture, serving to improve and refine the higher agricultural classes, and only the higher classes, not one exists in this country, or possibly can occur for centuries to come.

In the northern and north-western states of the confederacy, there are also to be found, (as yet, though they must certainly and soon disappear,) many proprietors and cultivators of land who are men of education and intelligence, and whose wives and daughters have a high degree of refinement of manners. But in nearly every such case, it will be found that this intelligence and refinement were derived from some previous and different training and position; and that these qualities have been so far retained in agricultural life by the large agricultural profits and accumulations of wealth available in a newly settled country. But even now, the general condition of the agricultural class in these non-slave-holding states is much lowered, and tending to what must be hereafter a state of general and deep degradation, in intellectual and social qualities. And with them, the degradation will not stop when as low as that of the tenantry of England, or of the boors who reap rich harvests from the fat soil of Belgium. The comparative poverty of soil in the older northern states, and the general and repeated divisions of property therein, by inheritance, indicate a future condition of the proprietors more like to that of the wretched and ignorant proprietary class of France.

Even now, it is comparatively a rare case in the northern states to find, what is so common in the southern, a highly intelligent man, with a well educated and refined family, all natives of and still residing in the country, and belonging strictly to the agricultural class. Such persons have little inducement to remain in (and still less to commence) country life and agricultural employments in the northern states. And should any such, perchance, be so situated, they must either abandon their pursuits and their locality, or be content that their children shall sink to the general level of the surrounding residents, in coarse manners and uncultivated intellect. A sufficient proof of the working of this law of circumstances is presented continually to the world in the contrast of the representation in Congress from the country districts of the northern and southern states respectively. The most distinguished men, and especially statesmen, of the south, have (at least) as often been natives and continued residents of the country as of towns—and in talent and in numbers they have far exceeded all from the north in our public councils. In the northern states there are indeed many men of the highest talents, education and learning—and, it may be, in the latter respects exceeding any in the south, because of the greater advantages offered by great cities for literary and scientific pursuits. But these great men are either produced in or gathered to the great cities only. They are men who have acquired their just renown either as lawyers, physicians, divines, or professors in scientific and literary institutions. All of great intellectual power that now exists in the great states of Massachusetts, New York, and Pennsylvania, is to be found in their populous cities only—and almost exclusively in their respective great capitals. Some truly great men may be (and sometimes are) furnished from these cities to aid the public councils. But never does one such come from all the twenty-fold greater country and village constituencies—which even when disposed thus to honor the highest talent (which is not often the case, either in town or country—north or

south)—could not possibly find amon themselves any high talent to honor. The difference between the intellectual conditions of the northern and southern agricultural population, is the cause of the usual long existing and well known commanding influence in the federal government of the southern states, through their representatives, in whatever measures of national policy are directed by wisdom, or intellect, or for the benefit of general interests. But we are now much the weakest in votes, and in whatever of public policy is connected with sectional interests, or still baser private self-interest—superior intellect has no influence, and we are governed by the brute force and cupidity of superior numbers.

The peculiar defects of northern agricultural labor in its influence on social and domestic relations, do not (as yet) forbid great pecuniary success in agricultural pursuits. Indeed, when no far-reaching intellectual power is required to devise or direct a system of culture or improvement, or while enough of such direction, derived from former influences, yet remains in operation, the returns of agricultural capital are even increased by the existing condition of things in the northern states.

A farmer or planter of the south, not rich, but in independent and comfortable circumstances, gives a portion of his time to social and mental occupation. Perhaps his whole object in seeking such relaxation is present enjoyment. But the final result is not the less improvement of mind and manners. His sons and daughters grow up under these advantages and influences of social communication. And, if in the end, because of such indulgences of a family, even though moderately and properly enjoyed, there may be less money accumulated, there will be acquired other values much more than compensating the difference of pecuniary gains. Elwood Fisher, (in his excellent lecture on "The North and the South," (has observed most truly that the ordinary social intercourse of the people of the south serves admirably as a school of instruction. Quoting by memory only from this profound thinker and able advocate of southern institutions and rights, I am not sure whether I am indebted directly to his expressions, or indirectly, (by deduction from them) for the opinion which will here be added—that this social school, in its operation for improving manners and morals, for enlarging observation and thought, and for affording general and useful information, is far better than the much lauded common-school education of the New England states. Spelling, reading and common arithmetic are indeed necessary and excellent first steps in the pursuit of useful instruction and knowledge. But he who goes no farther in the pursuit, might as well have not moved at all.

A farmer of New York or Pennsylvania, in like moderate, but independent circumstances as to amount of property to those just supposed for the southerner, would be compelled to be one of his own continual laborers. His wife would be the most unceasing drudge on the farm. His sons, and, not less his daughters, would be brought up to continued labor in the lowest and most repulsive employments, and without any improving, social intercourse, because its cost could not be afforded. Under such circumstances, aided by the usual accompaniments of industry, frugality and parsimonious expenditure, wealth may and probably will be increased. But the possessors will seek and find nearly all their objects and pleasures in such accumulation, and they, or the next generation, will descend as much in refinement and intellect, as the stock of wealth may be increased. Such a proprietor, in mere money valuation, is just so much the richer as the value of the wages of himself, his wife, and his children, as day-laborers on the farm, or in the house. A life of continued, moderate and regular labor, is not a life of pain. When encouraged by the prospect, and rewarded by the fruition of gain, it becomes a life of pleasure. Thus the accumulation of wealth, by an industrious northern farmer, does not usually induce any intermission of his early labors, or change the habits, labors, or training of his children. When he may have acquired $30,000 worth of property, he continues to labor as steadily, and to live nearly as rudely as when under the pressure of his early poverty. His son still drives his father's wagon or his hogs to market—in no way distinguished in appearance or habits from the other hired laborers. His wife is still the most laborious domestic drudge. His daughters have no improving society, and their daily and continuous employments are those of menial servants—whose services it would be too costly to hire.

This is the general condition to which agricultural society and manners must tend, are tending, and have already reached, to great extent, in the older non-slaveholding states. This is the condition from which we are saved, and immeasurably exalted,

by the subjection and slavery of an inferior race. The superior race here is free. In the so-called free countries, the far greater number of the superior race is, in effect, enslaved, and thereby degraded to a condition suitable only for a race made inferior by nature. There exists slavery, or the subjection of man to man, in every country under the sun, except, perhaps, the most barbarous and ignorant. In these southern states we have the slavery of individual to individual, and of a naturally inferior to a naturally superior race; which, of all, is the condition best for both masters and slaves. In the so-called free countries, in addition to the sometimes most oppressive rule of a despotic and grinding government—or it may be under free constitutional government, there is the slavery of class to class—of the starving laborers to the paying employers. Hunger and cold are the most exacting of all task-masters. The victims of hunger and cold are always, and of necessity, slaves to their wants, and through them, to those who only can supply their wants. The great argument urged by English and northern advocates for the abolition of our system of slavery, (while totally regardless of their own) is that hired labor is cheaper than slave-labor. And this is unquestionably true, as to both Old England and New England, and all other countries where the formerly existing domestic slavery has been abolished, because (and only because,) it had ceased to be the most profitable to the slaveholders. Whenever continued severe suffering from hunger and cold, and the number of the sufferers, compel the destitute class to compete eagerly with each other in lowering the wages of their labor to obtain bread, then the payment for such labor of so-called free men necessarily becomes cheaper than would be the support of a domestic slave. Of course, if domestic slavery then remained in that country, the owners of slaves would hasten to get rid of them, and to employ instead the cheaper labors furnished and tasked and driven by hunger and cold. Thus, and for these reasons, acted our English ancestors, when manumitting their white slaves. Thus, and still better for their own interest, did our northern brethren. For when convinced that domestic slavery was too costly in their wintry region, they first sold their negro slaves to the south, and while thereafter avoiding their costly use, they continued, as long as permitted by law, to steal new supplies from Africa to sell to the southern states. If the former southern demand for Africans still existed, and the African slave trade was open by law—or if it were safe and profitable to violate the new prohibitory law—enough of our northern brethren would be now as ready as ever to supply the demand. And if their access to the coast of Africa was prevented, they would be as willing (if safe and profitable,) to supply all the south with slaves, by kidnapping the subjects of their now desired ally, the negro emperor of Hayti.

Nearly all of the many vessels which have been engaged in the African slave trade, in violation of the prohibitory laws of the United States, were fitted out for that purpose from northern ports and by northern capital, and were manned by northern crews. This trade, since being prohibited and made piracy by our laws, has been carried on to supply slaves to Cuba and Brazil, with incomparably more inhumanity and cruelty, than attended the formerly legalized and regulated traffic. From time to time, we have seen announced the detection of sundry vessels, or persons engaged in this now atrocious business of torture and murder in the sea voyage; and legal proceedings have often been commenced against the supposed offenders in the northern cities to which they respectively belonged. But in not one such case have I ever heard of the conviction followed by due punishment of any of these worst of criminals. And when such detections of these acts of legal piracy are announced in northern newspapers, it is usually done in as few words as would serve for any other commercial occurrence, of innocent or legal character. Yet, besides the illegality of the trade, any one such voyage, made by the order and funds of merchants of a northern city, would furnish more true facts of suffering, crime and horror, than could possibly occur among all the slaves in the southern states in the same length of time. No furious popular and philanthropic indignation has been aroused against these detected pirates—neither the crews and their commanders, nor the rich capitalists, who were the owners and real traders, torturers and murderers. The great gain of the trade seems to serve as a veil and excuse for its deep iniquity. D'Wolf, who was alleged and believed to have been one of the great slave-trading capitalists of Rhode Island, (while the trade was yet legal,) was not therefore the less a leading man of that state, as is evident from his having been subsequently elected

by its Legislature to the Senate of the United States. If any such African slave trader had lived in the southern states, all his wealth would not have lifted him to a respectable position; and he could not have obtained the lowest office, from either people or government, as readily as did his compeer of Rhode Island attain the highest official station, and I suppose the highest estimation, in slavery-hating and puritanical New England.

There are still other kinds of slavery besides those produced by force, and by want and suffering. General ignorance leads to the corruption of a people, and of subjection of mind to mind. And this kind of slavery, as it is in effect, tending to the most awful political and national evils, is already growing rapidly in the so-called free northern states. It is in their circumstances—of the land cultivated and owned by an unenlightened and still deteriorating country population—of large cities, in which, with a few men of highest intellectual powers, or popular influence, there is collected an enormously predominating number of ignorant, needy, and unprincipled men—when a very large proportion of the population of these cities is composed of newly arrived foreigners, often vicious and turbulent, and necessarily unacquainted with the principles of free government, and unused to freedom in any form—I say, it is certain, in such circumstances as these, that the body of the people will be directed, governed, and in effect enslaved by a few master-minds—and these minds generally acting solely for the promotion of base self-interest and personal aggrandizement. No safe-guards in written constitutions can preserve such a people from being made the tools and slaves of able political knaves and unscrupulous demagogues. With such population of both towns and country—with such influences at work, and their tendencies—with such unprincipled leaders and managers, and such followers—in the great state of New York, political liberty, in effect, is already at an end; and individual property, and even life, are unsafe. If the doors of every dwelling house in the southern country were left nightly without locks, or bolts, and if every slave on each farm had full command of deadly weapons, (and both such circumstances, in effect, are real in innumerable and continuing cases,) our property and our lives would be much safer from any attempts thereon by our slaves, than soon will be the property and lives of the wealthier people of New York from their fellow-citizens, notwithstanding all the protection afforded by the constitution and laws of their nominal free government. Indeed, the beginning of this terrible consummation is already clearly indicated in the successful progress of the anti-rent-paying combination and movement of the state of New York. For many years, numerous occupiers of rented lands have openly and avowedly leagued to withhold the payment of the rents due to the proprietors, and yet hold to the land. The laws have been trampled upon by this felonious league, and the decrees of courts frustrated or silenced. The agents of the proprietors and creditors have been outrageously maltreated, (as would have been the principals, had they dared to appear,) and the officers of justice, when attempting to enforce legal processes, have been resisted by arms, and in some cases have been murdered by these defiers of the laws. Growing more powerful and bold with time and success, these anti-renters have assumed a political position and organization, and thus exercise great influence in state elections. And as a crowning act of triumph, they were enabled to secure the election of a candidate for the chief magistracy, upon the understood engagement of that candidate that he would prostitute his pardoning power as governor, to discharge from the state's prison some of the most desperate felons of the anti-rent party, who by rare chance had been convicted and sentenced to punishment in that confinement. Whether this corrupt and most vile pledge had been expressly given or not, it was charged as being understood, and was acted upon by the anti-renters—and was faithfully redeemed by the governor so elected, by his speedy pardon of the desperate criminals, for whom his aid had been thus sought to be purchased.

In these so-called free northern states, there are two powerful and counteracting influences at work, each tending to establish a very different kind of class slavery. The ultimate fate of these states will depend upon which of these two adverse influences will move the faster towards its own peculiar evil and calamitous conclusion. Either the laboring population will be enslaved, through want and suffering, to the employers and capitalists, (as is already complete in Britain and other old countries where individual slavery has ceased—) or otherwise, if popular licentiousness, or demagogue rule, is too strong

in opposition to capital, then the spirit of agrarianism, communism and anti-rentism—all tending to anarchy and the destruction of the rights of property—will govern. Then may be looked for such regard to property, liberty and life, as was seen in the like calamitous time of the Reign of Terror and of Robespierre.—This latter end will be more likely than the former to mark the last scenes of the tragic farce of free government in the state of New York especially, and of the northern states generally. If they are to be saved from this threatening consummation, it will be by the protection of the federal union—and that only permitted and exerted by the operation of the conservative influence of domestic slavery on the government and policy of the southern states and through them on the whole confederacy. That conservative influence, serving as "the balance wheel of the government," (so-called by a great statesman) has already had much beneficial influence. Should that remote and unseen, but not the less real conservative influence be lost to the northern states, by either the abolition of slavery, or by their separation from the southern states, then the downward career of the northern states will become more and more rapid into one or the other of these abysses of class slavery which have been named. Should the anarchists and the mob, under their master demagogues, obtain the victory over capital, how that victory will be used has been already indicated in the acts of anti-rentism in the state of New York, the murderous riots of the cities of New York and Philadelphia, and the burning of religious edifices, inhabited only by defenceless women, by the people of the "law-abiding" and pharisaical city of Boston—and all followed by either the partial or complete impunity of all these flagrant violations of law, justice and humanity.

One of the great benefits of the institution of African slavery to the southern states is its effect in keeping away from our territory, and directing to the north and north-west, the hordes of immigrants now flowing from Europe, and which accession of population has already so much demoralized not only the states receiving the largest supplies of such population, but the federal government itself. Every political aspirant, aiming for the highest offices, deems it to his interest to conciliate and attempt to bribe to his support, this new and enormous element of political power. Hence we see unprincipled, but not the less influential and dangerous aspirants for presidential honors, competing with each other, as to who shall offer the highest bids for this support, in bestowing the public lands gratuitously on immigrants from all the world. It will not be long before this foreign power so fostered and increased, will be so strong, that the grants, conditions, or acquiescence of the government, will be altogether superfluous and worthless.

Far is it from my intention to stigmatize any of our population upon the ground of foreign birth. We should value men for their known merits, and not for their places of nativity. We ought to feel even the more indebted to a good citizen, or a public benefactor, if a foreigner, who had sought our land and government from preference, than if the mere accident of native birth had placed him in our country. Hence we are the more indebted for the services and talents and the patriotism of Montgomery, Charles Lee, Hamilton, Lafayette, Kosciusko, Pulaski, Gallatin and Soulé, as foreigners, than if they had been among us by birth, instead of by preference. To hundreds of thousands of immigrants from Europe our country has been greatly indebted for their useful private or public lives. But I speak of classes, and not of individuals—of the general rule, and not of its exceptions. Taken altogether, the recent and present immigration from Europe is lower in intelligence than the lowest class of native citizens, and immeasurably inferior in knowledge and appreciation of the principles of free government. An infusion of such new population, amounting to a small minority only, could do no political harm. But the danger of prospective evil is enormous, when this new population can control entire states, and, if not able to elect a president, is so powerful as to be offered bribes for that purpose by every ambitious and unprincipled seeker of the office, who can so influence the legislation of the Congress of the United States.

The pretended philanthropists of the northern states are well aware of the effects which the success of their efforts for the abolition of southern slavery would produce. The Wilberforces and Clarksons and Benezets of former times doubtless were deceived, and believed all they professed as to the expected beneficial results of negro emancipation. But since the experiment of Hayti, now of fifty years' standing, and of others of later date, in the

British West Indies, and all the latter made with the utmost care and under the most favorable auspices, no abolitionist of good sense and information can believe in the benefits of emancipation even to the slaves themselves, or in the fitness of the negro race for freedom and self-government. The present leaders in this northern warfare against southern slavery are actuated much less by love for the slaves than by hatred for their masters. Their lust for political power is a still stronger operating motive than either. They know that the complete fruition of their machinations would be to reduce the southern states to the condition of Jamaica, if not to the still worse state of Hayti. If they, or other as malignant and more powerful enemies, should ever succeed in abolishing this institution in these southern states, it will not only be the utter ruin of these states, but one of the heaviest blows to the well-being of the world—the most powerful obstacle to the settlement, culture, civilization, and highest improvement of all this western continent, and the extension of free government and the true principles of freedom among all the superior races capable of appreciating and preserving those blessings. And even the northern states, all of which are now desirous, if not striving for the abolition of slavery in the south, would be, next to the southern states, the greatest losers by that result, both in their pecuniary interests and political safety.

If there is any existing institution of divine origin, and manifestly designed and used by the all-wise and all-good Creator to forward his beneficent purposes, slavery, and especially African domestic slavery, is such an institution. Personal slavery has existed from the earliest known existence of society. Slaves were held by the most virtuous and the most favored of God's ancient worshippers and servants.—Slavery has ever been the means, if it is not the only possible means, of civilizing barbarous tribes and regions, spreading the culture of the earth, and instructing the most ignorant and degraded races of men. Still better and peculiar features belong to African slavery, under civilized and white masters. By this, a race made inferior by nature, and always enslaved to barbarous and cruel masters, was raised greatly in the scale of comfort and happiness, as well as of improvement. Civilization and Christianity have thus been communicated to millions, who otherwise would never have heard of either. By aid of negro slavery only, could these southern states, and still more the tropical regions of America, have been settled and cultivated by the white race. All that has been done in the south, and much of all done even in the northern states, for industrial and moral improvement, refinement and even religion, has been more or less due to the existence of African slavery. For even all the older northern states had the benefit of this institution at first, when it was most needed, and retained it as long as it continued to be beneficial, and until the now fast growing slavery to want began to operate as a substitute.

It is true that the institution of slavery is attended by many and great particular evils. And where is the great social institution which is not? Even in the blessed relations of husband and wife, and of parent and child, there are cases of great unhappiness and evil, and crime, growing out of these very relations. Yet, because there are husbands and wives, and parents and children, who are monsters in human shape, and who can avail themselves of these respective characters to perpetrate the most horrible crimes, and inflict the direst calamities on helpless and innocent sufferers, who would, therefore, condemn, and strive to abolish, the institution of marriage, or the subjection of children to parents? The legal institution of apprenticeship, prevailing among every civilized and refined people, is precisely slavery, only limited in the time of duration. In this generally beneficial relation of master and apprentice—and not less among the southern philanthropists than elsewhere—there occur numerous cases of great injustice and cruelty, and of extreme and unmerited suffering. Yet, who, among these even sincere worshippers of a sickly philanthropy, has proposed as the proper safeguard against such particular cases of oppression and crime, the abolition of the entire system of apprenticeship?

Judging from the early existence and continued duration of the institution of domestic slavery—its almost universal extension—its beneficial influence in subduing barbarism and savage indolence and ignorance—in inducing the culture and improvement of the earth, and promoting the industry, civilization, refinement and general well-being of mankind—it seems to me an inevitable deduction, that the institution of slavery is as surely and manifestly established by the wise and benevolent design of God, as the institution of marriage and of parental rule—and it is next to these, and inferior to these only, in producing important benefits to mankind. To the direct aid of domestic slavery, every cultivated portion of the earth owes its first improvement, and every civilized people their first emerging from barbarism. The only exceptions to the existence (past or present,) and operation of this great element of improvement, are to be found among the most rude and ignorant of savage tribes, such as the aboriginal inhabitants of North America and Australia. And if it had ever been, since the creation of man, that all mankind had been sunk in that lowest depth of barbarism, they would have so continued to this day, if without the aid of the institution of domestic slavery, for their improvement, or otherwise, the still more direct exercise of the miraculous, as well as benevolent power of Almighty God.

THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, Editor. P. D. BERNARD, Proprietor.

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For the Southern Planter.

WORN-OUT LANDS IN VIRGINIA.

Mr. Editor,—Much has been said of late in our agricultural periodicals, on the improvement of worn-out lands. In our old commonwealth, no subject can compare with this in importance, and yet, few have been treated in a manner so little calculated to lead to valuable practical results. Indeed, in most instances, the modes prescribed tend rather to discourage, from the fact that those sources of fertility, so frequently recommended, are wholly inaccessible to the majority of farmers, or if accessible, involve an amount of labor and cost incompatible with their present necessities. Such prescriptions are suited only to the farmer who resides in the vicinity of a city, or to those of large means and independent of the immediate productions of their farms.—Lime, guano, bone-dust, ashes, poudrette and the various chemical compounds now in vogue, are, perhaps, all valuable, some of them certainly are, and should be resorted to whenever practicable; but how many of our farmers are able to purchase those materials, and incur the heavy cost of transportation, with a fair prospect of remuneration, under the existing uncertainty of our staple crop? What then is to be done by those owning exhausted farms, with limited means, and remote from those artificial sources of improvement? Are they to remain stationary and without hope in the future, while the demands of their families and the tax-gatherer are yearly increasing upon them? What then is the remedy? Simply a cheap, economical mode by which their lands may be speedily brought to a degree of productiveness that will enable, and, at the same time, encourage them to resort to higher grades of farming. On this subject, I propose submitting a few practical reflections—the result of my individual experience.

The first inquiry that presents itself, is, by what means have our lands, once so productive in all the staples of the country, been deprived of their fertility? And next, what practicable mode is there, within the reach of all, of restoring, in some degree, that fertility at the least cost and in the shortest time?

The exhausting system to which our lands were for a long time subjected, and are now to a great extent, affords a ready solution of the first inquiry. Extended and superficial culture, with heavy and frequent cropping with tobacco, corn and wheat, depending wholly upon the native resources of the soil, in time effected an almost total exhaustion of its vegetable and mineral substances, or at least, such a special exhaustion of some of the indispensable ingredients of the surface soil, as to render it incapable of longer producing remunerating crops. The surface soil having been thus deprived of its fertility, the ready suggestion of common sense would seem to be, to look to the subsoil to supply the deficiencies of the surface. Accordingly we shall find here, in all clay soils at least, much that is valuable, requiring only to be brought to the surface to become available. Deep ploughing then, may be regarded as the first step in the process of renovating old lands in certain sections of our country, and indispensable to their permanent and progressive improvement. In such cases, it may be presumed that, in addition to the natural supply of organic and inorganic materials in the subsoil, much of that of the surface has been washed down into it by rains, and needs to be brought to the surface that, by the action of the atmosphere and other causes, they may be rendered soluble, and in a condition to be taken up as food, by the roots of cultivated plants. As an evidence of the fertility of our subsoil, I will here mention a fact which has more than once come under my observation. In a field much infested by ground-hogs, near the den of one, upon a heap of clay several inches deep, which, from its appearance, had evidently been drawn by the animal from a considerable depth beneath the surface, the wheat had branched more, was more luxuriant, with greatly superior heads, and particularly striking from the brightness of the straw compared with that around it. This difference was evidently owing to the existence in the subsoil of some virtue of which the surface was deficient.

Next in importance to deep ploughing, must be ranked clover and plaster They are inseparable, and the farmer who uses one without the other, is insensible to his own interests. Its action is two-fold: by its roots it penetrates and loosens the subsoil, bringing up, and as it were cooking the food of other plants—by its luxuriant top, it shades and screens the surface from the injurious effects of the sun. On unimproved estates, where the number of animals

cept should not exceed the absolute requirements of the farm, and where, of course, purescent manures, to any extent, are, for a ime at least, out of the question, the farmer nust look to clover and plaster as the pillars of his support. Without them, in the absence of means to procure concentrated manures, he can do nothing. Hence, the question, as to he best mode of ensuring a stand of clover, becomes one of grave importance to the farmers of poor lands. I apprehend a costly error s frequently committed by many farmers, who ely for success on the quantity of seed sown, without reference to other material considerations, being unmindful of the fact that a quart of seed and half a bushel of plaster per acre, s more to be relied on, than a gallon of seed without the plaster, in an unfavorable season. As a general rule, a bushel of seed to twenty acres sowed the last of February, or first of March, well scattered in breadths of about eight feet to the hand, and after a few frosts olled either with a peg roller or a smooth one, will be found to give a sufficient thickness, provided half a bushel or three pecks of plaster s applied to the wheat land in the fall. The all sowing of the plaster is preferred, that it nay be dissolved by the winter rains, and thus nade available to sustain the young clover, during drought in spring and summer. If the application of the plaster is postponed till pring, it may often fail in its effects, from the vant of rain, to dissolve it in time to give the young plant a vigorous start.

Having accomplished a good stand of clover, he task of improvement is but half performed. nstead of yielding to the temptation (and it s a strong one,) of grazing or mowing, except n fertile spots, the luxuriant crop of the first ear, it should be permitted to remain and deposit its seed on the land. The second year's crop, when in full bloom, should be well turned under, if the land is intended for wheat, and care should be taken in the preparation not to turn back the furrow slice. If for corn, partial fall grazing may be allowed, and early ploughing becomes necessary to destroy insects. In he gradual development of this system, under a judicious rotation, the profits of the farm are constantly increasing, and also the means of adding to the fertility of the soil, by the increased quantity of manure, which can now be produced from the resources of the farm. Decided as are the benefits of guano on our red lands, though less than on other soils, I can confidently assert, that I have seen on my own farm even more striking and permanent results from the first application of clover and plaster, in the grain as well as subsequent grass crops. Now there are means of improvement within the reach of every farmer, and after his fields have been each subjected a few times to the process above described, he will be enabled to draw more heavily on the fertility of his soil in the form of grain, beef, butter, &c. and to repair the waste thereby occasioned, by recourse to concentrated and costly manures.

It is a subject of surprise and much regret, that so few of our farmers in eastern Virginia raise their own clover seed. Two cradlers in four days, I apprehend, can easily save from six to ten bushels of an average crop. The subsequent labor of housing and threshing from the haum is insignificant, and separating the seed from the chaff is unnecessary when to be used on the farm. Now this seed is worth from thirty dollars to forty dollars, a sum sufficient to purchase the necessary supply of plaster. It is estimated, that from three to five thousand dollars are annually paid for this article by the farmers of Orange, when they could save it for themselves at one-twentieth of the cost.

The low price of grain and the high price of guano, it seems to me, should naturally lead to inquiry on this subject, by cultivators of poor lands. For such, these suggestions are intended—but should you, Mr. Editor, incline to the belief that I am behind the age and that my remarks are more appropriate to a period twenty years past, I can only regret that my observations lead to a less happy conclusion, and that they are as applicable now, in very many instances, as then.

In my next I shall offer you some reflections on draining—a department little understood and much neglected.

JAMES NEWMAN.

Orange county, January, 1852.

We knew no farmer in the whole range of our acquaintance of sounder judgment and more practical views than our friend Mr. Newman, who has the good sense to put his name to his essay. We commend his essay to the attention of all farmers within his range of country. Though several of his suggestions are applicable to the whole State.

We trust that we shall hear from him frequently.—ED.

For the Southern Planter.

EXPERIMENTS IN THE APPLICATION OF PLASTER TO MANURE.

Mr. Editor,—The great importance of guano as a manure, and the liability of its ammonia, the most important of its fertilizing constituents, to escape into the atmosphere, will, I trust, be a sufficient apology for my offering a few remarks to your readers, in regard to the manner in which this difficulty may be obviated.

All the analyses of guano that have been published, show that most of the ammonia exists in the form of *urate* of ammonia, a fixed and insoluble salt, and that the amount of carbonate of ammonia, the only volatile salt, is very small. This is true in guano that has

lost most of its ammonia by decomposition, as well as in that of the best quality. The explanation of the constant absence of the carbonate may be found in the fact, that so soon as guano becomes moist in a warm or temperate atmosphere, decomposition commences; this decomposition consists in the formation of the carbonate from the urate of ammonia, and there being nothing in the guano to prevent, the carbonate immediately escapes into the atmosphere. When guano is applied to land, this decomposition must take place rapidly. Under ordinary circumstances, a part of the carbonate will be carried to the plants by water, in which it is very soluble, while more or less will escape, unless we have present some substance which will decompose the carbonate as it is formed, again forming a fixed salt.

The well known power of the carbonate of ammonia to decompose plaster, the sulphate of lime forming the sulphate of ammonia, a fixed and soluble salt, has led many chemists to recommend the use of the latter with guano, and the experience of many practical farmers is in favor of such a mixture. But, as some persons are disposed to doubt the utility of plaster in fixing ammonia, particularly in dry seasons, I was induced to make the following experiments, with a view to ascertain whether definite conclusions might not be arrived at:

Experiment First.—About equal quantities of carbonate of ammonia and plaster were well mixed, and sufficient water added to make the mixture into a paste. When first mixed, the odor of ammonia was very powerful; after standing a few minutes the odor was sensibly less, and in the course of half an hour it was scarcely perceptible. After standing two days, an analysis showed the presence of sulphate of ammonia in quantity, together with a corresponding amount of carbonate of lime.

Experiment Second.—The same mixture as in the first experiment, slightly moistened. In this the decomposition took place as before, but not with such rapidity.

Experiment Third.—The same mixture as in the preceding cases, but left perfectly dry, the plaster having been previously dried at a temperature of about one hundred degrees. For the first twenty-four hours no perceptible diminution of odor took place; at the end of forty-eight hours, however, there was a marked diminution, and an analysis proved that, even here, a certain amount of ammonia had been "fixed," by its union with the sulphuric acid of the plaster. As plaster, when dry, still contains a certain per centage of water in chemical union with the sulphate of lime, this water should be liberated when the plaster is decomposed. Such was the case in the present instance, for the mixture, although kept in a close vessel, was moist at the end of two days.

Experiment Fourth.—Moist plaster was suspended over a solution of carbonate of ammonia; result the same as above.

Experiment Fifth.—Dry plaster, suspended over dry carbonate of ammonia, placed in a close vessel, so that the plaster may be said to have been placed in an atmosphere of the carbonate. Result the same as in all the other cases; but the decomposition was slow, and less in quantity than when the two were mixed.

These experiments were repeated, some of them several times, and always with the same results. They prove conclusively that the mixing of plaster with guano, must, in all cases, prove beneficial; for, when we remember that the decomposition of guano leads, in all cases, to the formation of carbonate of ammonia, and that the carbonate, as showed in the above experiments, will decompose plaster, when in contact with it, whether wet or dry, there can be no room for doubt.

As guano is liable to absorb moisture, commence decomposition, and thus lose a part of its ammonia, it would be well for farmers to mix it with plaster as soon after its purchase as possible; or if it is not convenient to mix then, the plaster thrown upon the guano and moistened, will retain the ammonia until the farmer is ready to spread the manure on his land.

Again, the use of plaster in the farm-yard, the stable, and on the manure heap, cannot be too strongly urged. If, however, the manure heap is left to be drenched by every hard rain, not an uncommon practice, the use of plaster will be of little service, as the sulphate of ammonia, although not volatile, is very soluble.

It appears to me, that if a manure heap were well sheltered, plentifully supplied with moist plaster, and left until decomposition had far advanced, this manure would be more efficacious, in a great many cases, than if it were applied fresh. The plaster would retain the ammonia, the inorganic constituents could not escape, the decomposition would have progressed so far as to enable the crop to appropriate its constituents as food, more readily than if it were fresh, and its bulk would be greatly less, an important consideration on a large farm. But this is a matter for experiment, and I should be very much pleased if some of our practical farmers would take the matter in hand and favor us with their results.

V. M. I.

January 15, 1852.

For the Southern Planter.

GUANO.

Mr. Editor,—Wanting more information than I have been able to obtain, in reference to guano as a manure for tobacco, and wishing to draw from others of more experience with it their success, I am induced to give you an account of an experiment made by myself last spring, if you think it worth publication. After thoroughly preparing a piece of thin

land for tobacco, I divided it into three nearly equal parts. On the first piece we applied twenty-five loads of well littered stable manure, about seventy bushels to the load; on the second, four hundred pounds of Peruvian guano; and on the third piece, three hundred pounds to the acre, and harrowed it in with a heavy harrow on the same day. The land was then laid off (with a shovel plough) three feet apart either way, and hilled—endeavoring to draw the guano to the hill as much as possible. The crop was planted from the tenth to the thirteenth of June, and stood well, but was slow to grow, owing to severe drought, until early in July, when we had a tolerable season, and re-set the few missing plants. The weather continuing dry afterwards caused another serious check to it, until the more seasonable rains in August, when it made a rapid growth, and with the late autumn ripened well.

The first piece, or the stable manured land, made a fine crop of heavy tobacco, averaging a pound to every three plants. The second piece, with four hundred pounds of guano, made a pound to four and a half plants. And the third a pound to six plants.

The land would probably have made without manure six hundred pounds to the acre. The crop on the guanoed land was about one week later in ripening, but ripened first where the guano was heaviest, and cured of a darker color, which I think was owing to later cutting, and the weather being colder. The experiment was made on clover land of two years standing, ploughed early in the winter to the depth of seven inches, and re-ploughed in the spring. The soil has some admixture of sand with a stiff red clay subsoil. I have not been able to account for the great difference in yields from the two guanoed pieces, the land being nearly of the same fertility, except that the third piece was the last planted, and with smaller plants, and possibly not so good as the beds had been closely drawn. The guanoed land required nearly double the work to keep under the summer grass.

I am a new tobacco grower, the crop now on hand being my first; but with the kind instructions of experienced friends and neighbors, and with what I have been able to glean from agricultural journals, have succeeded in growing and curing a good crop of bright, excellent tobacco, and think, by accident, have learned something worth knowing. After cutting, the tobacco was set up in the field in the usual way, to protect it from the sun, carrying as much as was convenient to a place and covering it with top fodder. In hauling it in, a pile of several hundred plants was overlooked, and when found more than a week afterward, was of the most beautiful yellow, and seemed to have much thickened, and I supposed as much injured. It was kept to itself, and so far from being at all damaged, it is the very best tobacco we have. It may not be new to tobacco growers, but was so to me; and I think I shall be profited by it in curing another crop.

If I am not fatiguing your patience too much, it may not be out of place here to mention an expeditious and recent way to save the broken off leaves. With a large needle and cotton thread they are strung together, eight, ten or more, to prevent slipping, and they are ready to hang, by separating two leaves at each end and laying them across the stick, then stretch the string along the stick, to separate the leaves as much as is desired. In this way they can be saved in half the time usually taken, are much easier to handle afterwards, and attended with less loss.

I am having a tobacco press made, different from any thing I have seen, and when finished, if it comes up to my expectations, you shall hear from it.

Very respectfully yours,

JAMES A. REID.

The above article of Dr. Reid is just what we want—an accurate statement of experiments made with guano. There is much diversity in the accounts of its operation on tobacco, and we can decide nothing until we get the facts. Let us have more of them, and let them be accurately stated.—ED.

CURING BACON HAMS.

The following communication on this subject was sent to us by the gentleman to whom it is addressed, for publication in the Southern Planter:

Mr. Vaden: Dear Sir,—I have been requested by you to give my plan of curing bacon hams. I have only one objection in doing so,—being a widower, I like to stand fair with the ladies. Some of them, jealous creatures, dislike to see a man a good domestic manager, dislike to have their rights infringed upon to this extent. In this kind of management they like to stand *alone in their glory*, and are much inclined, I fear, to look upon a man who has a pretty good knowledge of *their* affairs with some suspicion. They must recollect, however, that my knowledge of the kind is the result of *dire necessity*, and I would, most willingly, *at any time*, let off this kind of management, to any extent, into the hands of some *fine, fair lady* as might suit her. But this curing of hams is rather out of their line. They should, therefore, acquiesce, and be willing to be relieved, to this extent, at least, and pride themselves alone in sitting behind a fine old, juicy, Virginia cured ham, and sharing it out, taking to herself all the credit and pleasure of having it extolled by her admiring friends, while the good man spreads his mouth in silence, and is much pleased to see with how much grace she takes all the credit to herself.

My hams have been commended to such an

extent, by good judges—some of them *fine managing ladies*, who do not always yield the palm of victory without a struggle—I shall make no further effort to improve on my plan for the present.

In the first place I have my hogs well fatted before I kill them. I most commonly kill one day and cut out the next, salting up and packing away on a platform on the northern side of my smoke house. In salting my hams last year, I took in my fingers some pulverized saltpetre and sprinkled on the flesh side of each ham, and then applied a plentiful mixture of one-third dry hickory ashes and two-thirds of salt. They laid in pack about six weeks. I then rolled them in dry hickory ashes and hung them up. My plan of drying is to kindle up a fire every morning of small round hickory wood. On the 17th March, (I intended to take them down the 1st of March,) the hams were taken down, and the flesh side covered with dry hickory ashes, at least half an inch thick, and placed singly on shelves in the smoke house, with flesh side up, putting a few dry ashes on the shelves before putting on the hams; or, instead of the ashes, a couple of small sticks might be used under each ham. Here they would keep safe, sound, sweet and juicy, *in my opinion*, for twenty years, the house of course always being rat and mouse proof.

My hams were soft and spongy while in pack, and I supposed they were ruined, and determined hereafter to use no more ashes in the salting, but cutting a few in two, discovered that while they were soft, they were *perfectly sound*. They proved to be so very fine, I shall pursue the same plan again. The application of the ashes on the several occasions, causes, perhaps, the juices of the ham to be retained, as well as to absorb any undue moisture, and to keep off the fly, bug, worm, &c.

Very respectfully yours, &c.

W. W. HANCOCK.

Chesterfield, November 25, 1851.

For the Southern Planter.

A SUBSCRIBER'S APPEAL IN BEHALF OF THE PLANTER.

Mr. Editor,—I fear your correspondents *Yadkin* and the one from North Carolina (from whose letter you gave an extract in the January number of the Planter) begin to think I do not intend to comply with my promise, endorsed by you, "that when I recovered from my indisposition I would try to answer more of the queries of "Yadkin." It is due to you and myself I should inform them I am now just able to sit up and walk a few steps, being confined to my bed nearly thirteen weeks, and when I can comply it is not in my power now to say. I can't *read* much, but took a peep into your January number, and ventured to read your "New-Year's Salutation, and Something More," which I have done with interest; and I wish it could be read, and its contents duly considered by every *honest* farmer in Virginia. I am glad you bring to our notice subjects of such *vital* importance to the interest and prosperity of our beloved Virginia, in that independent way that becomes you, as the editor of such a work, and in language that cannot be misunderstood. Go-a-head, sir—*agitation, agitation*, has accomplished much, and may do it again. But you *must* have more subscribers to accomplish much and to enable you to give us drawings or wood cuts, so important to make the Planter what it must be. I propose a very easy plan which, if adopted will, with small efforts, insure your list to be doubled in one month. *It can be done.* Let every man of us resolve to obtain one new subscriber to the Planter within one month as a return for your "New-Year's Salutation, and Something More." Every subscriber can do it, if he has any influence or any friends at all. Though I am now confined to my room, *I will do it*, or take another myself. What is the little trouble, or what is a dollar, when compared to the end in view? Your subscribers may not respond to my proposition, but if you will make it they can't refuse so small a request. Will you try it? Ah! if such an effort would only insure the election of some Democrat or Whig friend to some office, I will venture to say your number of subscribers would be doubled in one week—committees of vigilance would be appointed all over the State. But to advance the great interest and almost insure the prosperity of our State, and, finally, the happiness of our families and their posterity, is (it would seem) of much less importance. Is it not strange, that while we all desire prosperity and happiness, yet we are so unwise in the choice of means, often so completely in our power to obtain that end? Yet it is so. If your list is enlarged, as it ought to be, you could devote more time to important work to advance the interest of the Planter. A few years ago the Old Dominion stood still, idle and proud, with her arms akimbow, laughing at Yankeeism, until the Yankees had well nigh sucked all the life-blood from her veins, and robbed her of her glory and strength. She now needs your strong tonics to restore her again to her wonted strength, and then she may move on in her majesty and power in the broad and plain road to prosperity and happiness. I have said much more than I intended when I began—I am tired and must stop. Success attend your efforts.

Respectfully,

W. TIMBERLAKE.

Belle Air, Jan. 22, 1852.

We insert the above at the request of our friend, the writer. If one-tenth part of the seventy-seven thousand farmers of Virginia were animated by the same spirit, Virginia agriculture would be the pride of her sons and the envy of her neighbors.—ED. So. PL.

COLIC IN HORSES, AND THE USE OF THE TROCHAR.

Mr. Editor,—One word in reply to your comments upon my communication of the 3d of December, which appeared in this month's number. My horses *must* have been "of the right sort," whilst yours, one "half-bred," one "old," and the other probably less desirable than either, remind me of a lot of animals that a facetious dealer who once frequented this county, declined purchasing, being as much averse to carrying them to Richmond as Falstaff was his men through Coventry. But seriously, you astonished me very much indeed, for you know this *was* emphatically the land of blood-horses, and my long, constant, and intimate association with many of the worthies who figured so largely in elevating the character of that noble animal in this region, added to my own experience, led me to the confident assurance of the correctness of my position. It is true that I have *heard* of the death by colic of blood-horses, but the cases were isolated, "few and far between," and it yet remains to me to witness the first one. Now there may be, and doubtless is, a difference, probably an important one, in the constitution of your horses and ours, caused by the climate, soil and pasturage.

But the main object of my article was to promulgate, through the Planter, the means by which, as a last resort, horses might be saved when in the condition of the one of which I spoke. The process of this operation you will greatly oblige me by publishing, and I respectfully ask if the caption to this aforesaid paper is correct?

JAMES GOVAN.

February 5, 1852.

We think the term used, "Heaves," was wrong. But we did not use it. Whether put there by the publisher or by our friend, we cannot tell. We still think, with deference to the better judgment of Mr. Govan, that colic is not peculiar to the *constitution* of the cold-blooded more than the thorough-bred horse, but that its frequency in one case rather than another is due to difference in treatment, resulting from the different uses to which the two classes of animals are applied. Stewart, Stable Economy, p. 225, says:

"Heavy draught horses are almost the only subjects of colic, and among the owners of them it is difficult to meet with an old farmer who has not lost more than one. Light, fast working horses are rarely troubled with it, and few die of it. The difference is easily explained. Heavy, slow working horses are long in the yoke; they fast till their appetite is like a raven's; when they come home they get a large quantity of grain at once, and they devour it in such haste that it is not properly masticated, and the stomach is suddenly overloaded.—Possibly the quantity may not be very great, yet it is eaten too fast. The juice by which the food should be digested cannot be made in such a hurry, at least not enough of it; and add to this the rapid distension of the stomach; more deliberate mastication and deglutition would enable this organ to furnish the requisite quantity of gastric juice, and to dilate sufficiently to contain the food with ease. In fast feeding the stomach is taken too much by surprise.

"Light horses are usually fed oftener, and with more regularity. They receive grain so often that they are not so fond of it, not disposed to eat too much; and the nature of their work often destroys the appetite, even when abstinence has been unusually prolonged.

"The bulk of the food, however, has a great deal to do with the disease. *An overloaded stomach will produce it in any kind of horse*, but those who have the bowels and stomach habitually loaded are always in greatest danger.

"This seems to me the principal reason why slow work horses are so much more liable to the disease than fast workers."

Thus writes a good judge, and we agree with him. But we may be wrong.

We did not understand that we were expected to describe the operation of the trochar, or we would have done it with pleasure in our last.

The trochar is an instrument used for punching holes in the intestine of the horse or cow to let off the wind which causes colic and which cannot escape in the natural way.—Having never seen one, we can only say that it is a tube and knife combined, which is held in place after the puncture is made until the gas escapes through the tube, and that it can be so regulated by a guard as to penetrate only to the depth required. Nor have we ever used, or seen others use on either horse or cow, the knife, which is a clumsy and dangerous substitute. All the knowledge we have on the subject is derived from *Youatt on the Horse*.* At page 234, Skinner's Ed. he says:

"Where these two medicines are not at hand,

* By-the-by, "Youatt on the Horse" is the only complete veterinary treatise we have ever seen. There is no foolishness nor quackery in it, but sound sense, and honest science, and that too of a high order. Therefore, we advise every subscriber we have to send to J. W. Randolph of Richmond, and get it. The price, we think, is two dollars and fifty cents, and dirt cheap at that. Skinner's Edition is not equal to the English, but is cheaper, and will do very well.

and the danger is imminent, the trochar may be used, in order to open a way for the escape of the gas. The trochar should be small, but longer than that which is used for the cow, and the puncture should be made in the middle of the right flank, for there the large intestines are most easily reached. In such a disease, it cannot be expected that the intestines shall always be found precisely in their natural situations, but usually the origin of the ascending portion of the colon or the base of the carecum, will be pierced. The author of this work, however, deems it his duty to add, that it is only when the practitioner despairs of otherwise saving the life of the animal that this operation should be attempted. Much of the danger would be avoided by using a very small trochar, and by withdrawing it as soon as the gas has escaped. The wound in the intestines will then probably close, from the innate elasticity of the parts."

For the Southern Planter.

APPLICATION OF TOBACCO STALKS TO TOBACCO BEDS, &c.

Mr. Editor,—The article in the January number on the "Application of Guano to Tobacco Beds," I suppose is very good, but be you assured that no system is superior to that of underlaying with tobacco stalks. I speak advisedly, and from an experience of some ten or twelve years; and every planter who has adopted this course, will bear me out in this assertion. By the way, a friend of mine in Prince Edward county the last year, tested the merits of guano and tobacco stalks on two beds, but could realize no difference; it was neck and neck.

Relative to the communication on the "Application of Manures," I will remark that this subject is discussed in the most conclusive and laconic manner in the fifth volume of the Southern Planter, page 231. I will give an extract:

"What would you think of one who professed to be a surgeon without the knwledge of anatomy, or a physician, without knowing one medicine from another? How many of us know any thing of the ingredients of our lands, and how can we expect to improve them without such knowledge? Our ignorance on this subject has given rise to the slurs which are so often cast on scientific book-farming, and has caused many an honest man to be set down as an impostor, and the author of a humbug. For instance, I, living on land rich in mineral substances, tell you in the Planter, that I make fine crops from coarse unrotted manures, applied to the land; another of your subscribers, owning land, light and porous, and destitute of such substances, tries it, and finds his crop worthless and all burnt up; he tells you I am either a fool or an impostor. I tell you it is best to bury manure because my land is close, stiff and impervious; another tells you it is best applied to the surface, because his is gravelly and porous, and the manure soon sinks to the roots of his crop. One tells you there is nothing like fall and winter ploughing for the ensuing summer's crop; he lives on land pulverizable by the winter's frosts; another tells you that fall and winter ploughing is labor thrown away; his land runs together from the winter's rains; and you will find as many contradictory opinions relative to the different kinds of manures; all owing to a want of the knowledge of the ingredients of our soils. If we wish to insure the permanent improvement of our lands, we must know what ingredients are present and what wanting in them."

Attribute this lengthy communication, Mr. Planter, to the interest I feel for the cause of agriculture. So wishing the Planter a happy and prosperous new-year, I remain,

Yours, most respectfully,

WM. R. HATCHETT.

Danville, Jan. 23, 1852.

For the Southern Planter.

ESTIMATED COSTS OF FREE AND SLAVE LABOR,

QUOTED FROM HIGH AUTHORITIES.

In Vol. IV. of the Southern Planter, at page 265, there appeared a communication signed J. S. S. which, even without the signature, offers most ample internal evidence of being the writing of the late John S. Skinner, Esq. who was so long and extensively known as the oldest agricultural editor of this country, and a copious writer on agricultural subjects. The object of the communication referred to was to introduce another, from Dr. William Darlington of Pennsylvania, on "Improving Poor Lands by Liming," and to comment on such operations for Virginia and Maryland. The veteran writer then (in 1844) had nearly thirty years of experience as a student and also a teacher of agriculture. The result of all this long experience, of observation and of extensive communication with numerous intelligent agriculturists, in regard to the question of the relative cheapness of free and slave labor, may be inferred to be intimated, and with enough clearness, by Mr. Skinner, though not expressly or affirmatively stated, in this communication. In reference to the use of lime in parts of Virginia and Maryland he says: "The question then is, how far the farmer can haul it into the country before it begins, like the Indian's gun, to cost more than it comes to? and that depends, to be sure, on the nature of the road and the kind of team and vehicles employed, and at what expense they are maintained. Whether his driver is

bond or free? and this last branch of the question branches out again into the question of difference of expense between slave labor and free labor, for it by no means follows that because the man belongs to you, that, therefore, his labor comes cheaper than if you hired either a slave or a free laborer at eight or ten dollars a month—because, for every slave laborer of your own, you may be incumbered with a woman whose labor is not worth her expenses, and with several children—*consumers of much and producers of nothing*—moreover, the interest on the value of the slave is to be considered—what it would cost to insure his life and to insure him against running away? while the capital is at best *wearing and tearing onwards towards total loss.*" Afterwards the writer returns to this question, in the last words of his communication, and by the following emphatic question, italicized as here copied, he would appear to decide against the economy of slave labor, in yet stronger language—though, as before, but interrogatively and by implication, in asking, "*Can grain* be made *profitably* with *slave labor?*"

So much as to the opinion of the oldest agricultural editor and instructor as to the greater cost (and, indeed, as he seems to intimate the totally unprofitable use) of slave labor for cultivating grain crops. I will now refer to another of the same profession, and of high authority, for the cost of cultivation by free labor. Judge Buel, Editor of the New York Cultivator, wrote and published in that paper, an elaborate and interesting article on corn culture, in which he estimates the cost in the following passage:

"I put the average expense of cultivating and securing an acre, at fifteen dollars, including a fair rent, though it ordinarily exceeds this sum. The farmer, therefore, who obtains thirty bushels from the acre, estimating the grain at fifty cents per bushel, gets a fair compensation for his labor and the use of his land. Whatever the product falls short of this is an absolute loss; and whatever it may exceed it is net gain."—*Cultivator of* 1834—*Re-published in Farmers' Register, Vol. II. p* 65.

Judge Buel was a practical farmer, of experience, accurate observation and sound judgment—and having every facility for obtaining correct information of the agriculture of the Northern States generally, and especially of the easily tilled lands of the country surrounding his residence in Albany. No man could be better authority for agricultural facts and deductions, within his sphere of observation. Yet he estimates the actual cost of cultivating corn at fifteen dollars (and usually more) the acre—requiring, to barely reimburse labor and rent, a crop of thirty bushels, at the fairly stated price of fifty cents! This, then, may be relied upon as the cost of culture by *free labor*. Mr. Skinner supposed (as I infer from his questions) that slave labor is more costly than free labor—and not serving to get back the actual cost, if employed in *grain culture.* Hence, if Judge Buel was right (which can scarcely be disputed) as to the *absolute* cost of corn culture by free labor, and if Mr. Skinner was correct (which I certainly do not admit) as to the *relative* costs of free and slave labor, then corn culture by the latter must be a losing business even when producing thirty bushels to the acre—and losing to a speedily ruinous extent, at the much lower usual rates of production in lower Virginia.

I shall not here oppose the proposition of the greater expense of slave labor by offering direct evidence in estimates of cost. Such estimates are necessarily conjectural, and are, therefore, uncertain, and usually of but little exactness. It is sufficient to meet Mr. Skinner's supposed proposition by reducing it to an absurd conclusion. If it required more than thirty bushels of corn, or fifteen dollars, to return the costs of culture, then nearly all the land of the eastern half of Virginia has been cultivated at loss, for the last century, or more—and full half of the land has returned not more than half the costs of its tillage. Such enormous losses, if continued for even ten years, would bring to ruin any individual farmer, and the whole community that could be so stupid as to persevere in such a course. Yet, instead of this ruinous result, the agricultural community of lower Virginia has certainly made some general and average profit, although very far less than might have been secured by a better and more improving system of culture. Still, very few of the best farms in the tide-water district, and after great and very profitable improvements made, have yet exceeded the average production of thirty bushels of corn. Hundreds of farmers, who have reaped better profits from their capital than any in all the Northern States, have not reached that average product—and many such still fall short of twenty five bushels. And there are thousands of other and worse farmers, who do not make the half of thirty bushels of corn, (and this their main crop,) and who yet have lived in comfort upon such scanty products, and have certainly grown richer. Further—there are other thousands who do not make more than ten bushels of corn on an average—and who, though not to be cited as either good farmers or economists, or as profitable laborers or capitalists, still make out to live, rear and support families, and leave increased farming capital when they die. These general facts are notoriously true, and require no proof.

My deductions, from Judge Buel's estimate of the cost of culture by free labor, and also from all the facts under my own observation as to slave labor, have been directly the reverse of Mr. Skinner's. Yet we both had (in Virginia and Maryland respectively) very much the same kind of facts before us upon which to found estimates and make deductions. I am far from defending or excusing the course, or highly rating the profits of the farmers who are content with such poor average products

as ten or fifteen bushels of corn to the acre. Such returns indicate a wretched state of agriculture. I only say that even these low products are not necessarily and always obtained at loss, from slave labor. But I *do* maintain that even if a farmer in lower Virginia begins with the lowest of these products, and uses the ordinarily available means for increasing them by fertilization, he may speedily reach good profits by slave labor—and in most cases will derive much more clear profit from the improved rate of production of twenty-five bushels of corn, than thirty-five would return, according to Judge Buel's opinion, from free labor.

It would be waste of words to say more in support of the opinion above expressed as to the general results of farming by slave labor. But it may not be superfluous to add that in the last few years there have been spread extensively before the agricultural public, careful estimates, from different sources, of particular cases of the costs and returns of farming in lower Virginia, (and of exclusive grain culture for market,) which have shown very large and regular profits for farming capital; and which would compare well with, and perhaps surpass the profits of any other pursuit of regular industry or investment of capital in regular business, here or elsewhere. Hundreds of other improving farmers, in the same region, have derived and continue to derive profits which surpass any purely agricultural profits that can be made in the Northern States, from free labor. There is, truly, in lower Virginia, and in all the old States of the South, among the agricultural class, a great and lamentable amount of indolence, apathy, heedlessness, improvidence and wastefulness, all of which serve to detract very largely from the great available benefits of our position—and the indulgence in which errors would speedily bring to want and ruin any people whose advantages were not very great—or if no greater than those of the Northern farmers. Their greater (and very commendable) industry, and economy of means; their frugality, and perhaps even parsimony in expenditures, are indispensable to success in their situation, while our opposite (and very blamable) defects and errors are permitted to act, without being entirely and generally ruinous, only because of our greater resources. Improving and judicious farming in lower Virginia, (and in similar circumstances elsewhere,) with even but a moderate share of good management and economy, is certainly more profitable than on any lands of the old States north of Mason's and Dixon's line. And among the several elements which constitute this capacity for higher profits for our farming, one of the three most important is the employment of slave labor. The other two elements, of great importance, are the present low price of land, (a great evil to agricultural progress, it is true, but not less a benefit to a purchaser and new possessor,) and the facility and cheapness of enriching the land by mineral manures and other auxiliary means.

CALX.

FALL OF RAIN FOR THE YEARS 1850 AND 1851.

We are much obliged to our correspondent for the following contribution. We think a series of such observations would be of very decided value, and shall always insert them with pleasure.—ED. SO. PL.

For the Southern Planter.

It is interesting to the farmer, as well as to the meteorologist, to know how much rain falls during the year. Annexed is a statement of such for the years 1850 and 1851:

RAINS.

1850—January,	- -	3.24 inches.
" February,	- -	1.49 "
" March,	- -	1.99 "
" April,	- -	3.29 "
" May,	- - -	4.66 "
" June,	- - -	0.98 "
" July,	- - -	6.33 "
" August,	- -	4.73 "
" September,	- -	4.05 "
" October,	- -	1.61 "
" November,	- -	2.68 "
" December,	- -	2.90 "
Total,		37.95 inches.

SNOWS.

1850.—January 14,	8 to 10	inches deep.
" March 28,	6 to 8	" "
" December 31,	3 3	" "
Total,	17 to 21	inches.

HEAVY RAINS.

1850.—May 15,	1.08 inches.	
" May 26,	1.50 "	
" July 19,	4.21 "	36 hours.
" August 25,	3.69 "	14 "
" Sept'r 7,	1.56 "	
" October 18,	1.48 "	
" Nov. 30,	1.00 "	
" Dec. 7,	1.90 "	

RAINS.

1851.—January, - -	0.43 inches.
" February, - -	3.80 "
" March, - -	3.73 "
" April, - -	3.73½ "
" May, - - -	1.36 "
" June, - - -	3.15½ "
" July, - - -	2.87 "
" August, - -	2.05 "
" September, - -	1.25 "
" October, - -	1.27 "
" November, - -	2.25 "
" December, - -	1.03 "
Total,	26.93 inches.

SNOWS.

1851.—May 5,	1 to 2	inches deep.
" December 22,	8 to 9	" "
Total,	9 to 11	inches.

HEAVY RAINS.

1851.—Feb. 21,	1.72	inch.	
" March 8,	1.70	"	3 days.
" April 8,	1.47	"	
" May 5,	1.03	"	(snow.)
" June 22,	2.41	"	(2 in. fell in half an hour, doing much damage.)
" July 31,	1.50	"	24 hours, (a most refreshing, serviceable rain.)
" Nov. 15,	1.07	"	

My rain gauge is Grasley's Patent (English.)

The present winter thus far resembles strongly the winter of 1845-6. On the 6th and 13th of December, 1845, the thermometer was 19 degrees; on the 12th and 13th we cut ice four inches thick; on the 20th, thermometer 13 degrees; next morning, 12 degrees, and the ice four to five inches thick; the Rappahannock river was closed by ice for ten days; snow fell on the 16th, and lasted two weeks. On the 24th of January mercury fell to 11 degrees; snow was six inches deep, and ice made to the thickness of three inches; the navigation of the river stopped again. 27th of February thermometer 12 degrees—snowed on the 28th; 1st and 2d of March, when the average depth exceeded one foot, the roads were made impassable by high drifts—no mails arrived for a week; the snow disappeared finally on the 14th.

On the 16th of December, 1851, the thermometer was 16 degrees; next morning, 14 degrees; 18th and 19th, 11 degrees, when we cut ice four and a half to five inches thick; on the 22d snow fell to the depth of eight to nine inches; 24th, thermometer 6 degrees—the river is closed, and continued until the 30th—the ice on it having been about four inches thick. On the 6th inst. snow fell three to four inches deep; on the 8th thermometer 14 degrees; this morning 21 degrees. There is fine sleighing now, as also during nearly all of Christmas week.

E. T. T.

Powhatan Hill, King George Co. Jan. 12.

LIME BURNING AND ITS APPLICATION TO LAND IN PENNSYLVANIA.

We are happy to announce that Augusta has "*resumed payment*," as will be seen by the two subjoined excellent letters of Col. J. Marshall McCue, of that fine county. He has "broken the ice" in fine style, and now that "navigation is opened," we hope for many cargoes of rich freight from old Augusta.

The subject of which he treats in so clear and satisfactory a mode, the burning of lime, is an important one to some of his countymen, those especially on the line of the Central Rail Road. The time is not far distant when that fertilizer will be transported east through the tunnel. On many farms in this section now, perhaps on all except the red land proper—that is, the land provincially known as the southwest mountain land—lime is the one thing needful, or rather the thing most needful. We presume there is not a foot of gray land within the above limits that would not repay a liberal dressing of lime by a double product. Certainly, if the slate formations do not respond to it in that ratio, they are an exception to all the lands of their class that we ever heard of. And many a gravelly knoll now barren and verdureless can be made, by the aid of this benignant mineral, to blossom as the rose.

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LANCASTER, PA. January 20, 1852.

Dear Planter,—Some months ago I received a note requesting me to employ a leisure moment in writing something for thy columns, and common politeness made it requisite that I would ere this have acknowledged its reception, yet from various causes it has been delayed. Candor, however, compels me to say, that a want of experience in writing any thing for publication, and particularly for an agricultural paper, has had much to do with my silence. As I have strayed off here, for a few days from Baltimore, where business carried me, and as the main object I had in coming into this, *the best farmed* region of Pennsylvania, was to get some information about agriculture, I will employ a moment in giving you some of my observations. I spent a day or two in the counties of Cumberland and Dauphin, and in the former, examined the mode of construction of their lime kilns, and made many enquiries about the mode of its application to the land. Through the kindness of a friend, I visited the farm of Mr. Robert Bryson, a gentleman well known to the agricultural public, from a most interesting, and, I think, a truthful report, made by the committee of the Cumberland County Agricultural Society, a few years ago, of his farm—termed by them the "model farm" of this part of the State. He has been very extensively engaged in burning lime for some time, and has at least half a dozen large permanent kilns, capable of burning from five hundred to fourteen hundred bushels of lime each. They are situated on the edge of his farm, by the side of a public road, and where the ground falls off in such way as to enable him to bury the kilns in the bank, the top being level with the surface of

the ground above, thus making it easy to haul the stone and coal to the side, whence they are wheeled over the mouth by barrows and dropped into the kiln—and the eye or mouth from which the lime is taken, or if burned with wood, where it is deposited and is thus convenient to be used, is level with and by the roadside, whence the lime is easily loaded either into sleds or wagons. There being snow on the ground, there were several farmers who had come with their sleds a distance of ten and twelve miles, for lime to apply to their lands. The price at the kilns, in the rock or unslaked state, is from seven to ten cents per bushel. Mr. B. uses both coal and wood in burning, and the fine or inferior coal, the cheapest, is well adapted to the purpose. A ton of coal, in a properly constructed kiln, is considered sufficient to make from one hundred and twenty to one hundred and fifty bushels of lime. The permanent kiln is made with an opening slightly smaller at the bottom than above, and is then built up straight. The outside of the kiln may be built of limestone, (or any other kind of stone,) and the inside lining is of brick, or of any stone that will resist fire. Bricks that are made purely of clay, that is free from sand, Mr. B. informs me, are preferred, as those made in the common way will, under the intense heat, melt and run, and in a short time need replacing. He lines some of his kilns, as well as builds the eyes and the portions most exposed to the fire, with a sandstone often found in our mountains in Virginia, and used by iron-men in making hearths for their furnaces.

I ought to have mentioned that the general shape of the kiln is slightly removed from the round—is somewhat oblong. Mr. B. prefers to have a small arch built up in the bottom with brick, with holes left in it for the fire to get up and kindle the coal. Under this arch is placed a quantity of dry wood sufficient to ignite the coal, which is placed in alternate layers, with stone from the bottom to the top of the kiln. Lime is made much more rapidly in this way than with wood: Mr. B. having filled up his kiln, fired it and emptied it *all in one week.* He does this frequently and without any extraordinary exertion. The stone is not broken, as I had supposed necessary, very fine, but may be put in in blocks weighing from twenty five to fifty pounds, and will be thoroughly burned, and he thinks makes a *better* lime than when it has been broken small, as the excessive heat has not *burned the lime too much.* Mr. B. has also one or two *draw-kilns,* as they are termed. They are built as the others, except that in the bottom, instead of the arch described, he uses a few cross bars of iron, and then three or four longitudinal bars that can be drawn out. After the kiln has been fired and the lower part sufficiently burned, these bars, turned up at the end, can be drawn out, and the lime drawn down with a hook, and, at the same time, fresh coal and stone can be put in the kiln above, so that the process of *taking out lime* and *filling up the kiln* may go on at the same time. This is found a convenience sometimes, when he is hurried for lime; yet in a general way, he prefers the plan of filling up and burning a kiln without disturbing it. Another plan that is much used now in this and other counties here, where lime is burned, is to select a spot in the field where the stone is quarried, a firm sod is preferred, and to dig out as many small trenches as you think necessary for the size of the kiln, and over these turn arches with the stone you are going to burn, and then build up a kiln with alternate layers of stone and coal, drawing it in gradually towards the top, making it of a size proportioned to the quantity you desire to burn. They then plough up some earth around it, pour some water upon it and tramp it awhile with horses, and with the mud plaster carefully the outside of the kiln to retain the heat. The trenches or arches are filled with dry wood, (old rails are fine) which ignites the coal, and if the weather is suitable, dry and calm, the stone burns out perfectly, leaving but little "core," as they term that part of the kiln not thoroughly burned. This is becoming a popular method of burning lime, from its simplicity, economy and convenience. Almost any one can construct a kiln of this kind—it can be done in the field where you desire to use it, thus serving the double purpose of removing ugly breaks from your field that obstruct the plough, and saving labor in hauling the stone to a permanent kiln, and having the lime near the place where you desire to spread it. Much depends on the weather at the time you wish to burn, as to the productiveness of the kiln. If there is much wind, it chills the side of the kiln against which it blows, thus preventing its burning out, and if damp and cloudy, it has the same effect on all parts of the kiln. For the reason of uncertainty, Mr. Bryson thinks there is much more economy in the permanent kiln.

As to the Application. As soon as the kiln is sufficiently cool, the lime is carried out in wagons or sleds to the field where it is to be spread, and if put on land intended for corn, or small grain, the ground has first to be marked off with the plough or stakes, into squares and the lime placed in neat piles in the middle of those squares, the ground being made smooth under the piles, lest if rough *too much* remains in *that spot,* to the injury of the ground. If the weather is dry and the farmer is anxious to spread the lime directly, he will not await the tedious process of slaking by the atmosphere, but with a few barrels or hogsheads, on a wagon or slide, will carry out water and sprinkle the piles. This is often done here, as they much prefer to spread it in the flour, as they term it, the state it is in immediately after slaking, before any rain has fallen on it. As to the quantity per acre, that will vary with circumstances. The maximum quantity in Cumberland and this county, (Lancaster,) I think is about one hundred bushels per acre. The time and mode of its application is various.

Some prefer putting it on in the spring, on land designed for corn, after the ground is ploughed, and harrow it so as to mix it properly with the soil. Others put it on in the fall on ground intended for wheat, and others again spread it on grass land. An intelligent farmer, I met with, much prefers this latter mode of applying it, and on ground designed for corn a year or two after its application. Some compost it, when they want its immediate action. On thin land the quantity must be proportioned to quality. Too much is injurious. On the thin hill land skirting this and Cumberland counties, the fertility has been increased beyond the belief of any but an eye-witness. I have exhausted my paper and doubtless the patience of your readers, and will finish with the promise to write, it may be to annoy you, again.

J. Marshall McCue.

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Philadelphia, February 4, 1852.

Editor of the Southern Planter,—As introductory to what follows, suffer me to congratulate you on the most appropriate New Year's Address you sent forth with the January number of the Planter. Would that the advice therein given may be followed! As german to agricultural improvement, I will invite your readers to scan carefully the last report of the Board of Public Works to the Legislature, which sets forth in a clear and condensed manner the situation of the internal improvements of the State. It is a very able State paper, and in the main meets my views. Let the Legislature act in the premises promptly, and as becomes statesmen, having the best interests of the Old Commonwealth at heart, discard all local and sectional jealousies, and appropriate liberally to the great lines of improvement. Then will the agricultural and mechanical interests of the State receive the impetus, so long waited for. *Im*migration, instead of *emig*ration, will follow—population increase, the worn-out lands will be reclaimed—education will be diffused, the plough and loom and anvil will approach each other, and the consumer will furnish to the producer the *best of all* markets—*a home one*.

I promised to say something of the use of lime, as applied in the counties of Lancaster and Chester to the land—Lancaster being one of the largest "feeding" counties in the State, grows necessarily a great quantity of grain. All her *best* farmers use lime, when they can procure it within a reasonable distance. Our farmers in the Valley of Virginia, who have the limestone so abundant, would not agree with those of Lancaster, as to what constituted a *reasonable* distance, viz: ten and fifteen miles. The mode of application was stated in my first letter. The use of salt finds great favor with those who have used it in slaking, as it fixes some of the properties of the lime most beneficial to vegetation. A small quantity of salt dissolved in the water will answer. The farmer prefers to spread the lime immediately after it is slaked and in the flour state, as it is termed. Care must be taken to have the spot on which the pile is thrown at first, smooth, lest too much remain in the uneven places, and do injury to the crop. It is then carefully mixed with the soil by harrowing or shovelling in the wheat, if it is in the fall. One hundred bushels per acre is the maximum quantity used on any land, and that is too much on land that is thin. On land of this description, the majority concur in saying that it is best to mix the lime with the scrapings of the barn-yard, of fence corners, or swamp muck, either of which is preferable to fresh stable manure—and when thus mixed, the benefit to the crop seems immediate, otherwise years will elapse before its good effects are visible. Lands of a slatey character, or having much sand in them, with a good clay subsoil, show the beneficial effects of lime sooner than any other.

The hill lands along the southern border of Lancaster and Chester, near the Blue Ridge, called here the South Mountain, which some years since were considered almost worthless, and were bought at from five to ten dollars per acre, by the judicious use of lime, are rendered exceedingly productive and now readily command thirty and forty dollars. On meadow lands in both counties, and the grazing lands of Chester, lime is applied on the sod, in quantities varying from fifty to one hundred bushels per acre. The benefits are perceptible to the most casual observer; and it has been observed here that cattle fatten much better on lands that are well limed than on those that have been neglected. It is entirely in accordance with reason and common sense that it is so. Mr. Colman, in his Agricultural Tour, speaks of the repeated confirmations of this truth in England, by the experiments and observations of many of the most experienced agriculturists. An intelligent farmer of Loudoun county, who has been engaged in grazing for thirty years or more, in a conversation with me on this subject, several weeks since, confirmed its truth by his experience. My own observation in the grazing region in the Valley of Virginia, has satisfied me that it is more difficult every year to fatten cattle upon our old sod lands, which have been in grass for many years. Certain is it that every year is decreasing the phosphates and biphosphates in the soil, and artificial means must be used to restore them. Would not a series of experiments made by some of our intelligent practical graziers be exceedingly interesting, as tending to test the truth of this theory in the Valley?

As I remarked before, some farmers put the lime on lands intended for corn, yet there are others, and probably the larger number, who prefer to let their corn lands remain for oats, and apply the lime before putting in oats. And here I could but contrast what I have always deprecated with us as a most slovenly and unfarmer-like habit, of seeding our corn lands in wheat with the corn stalks *pulling up* all over

the field, to the great annoyance of the cradler and reaper, and an eye-sore to one who has seen and compared such seeding with the better plan in existence here. Besides, how seldom is it you ever see even an *ordinary* crop of wheat following a *good* crop of corn? You find the farmers of the Valley of Virginia excusing themselves for neglecting to use lime by saying, that "it is needless for us to apply lime to our lands, now so strongly impregnated with it, the stone being every where so abundant." This is a lame apology, and one that is dictated by prejudice—I had almost said ignorance, and which is every day refuted by the experience of the intelligent, thrifty and industrious farmers of Lancaster and Chester. The farmer here, who neglects to use lime, where it is at all within his reach, is regarded by his neighbors as unthrifty and indolent, and who will inevitably fall in the rear in every thing that is characteristic of a judicious man. Lime is estimated by the farmers here to hold the place among manures, which is given to calomel in the materia medica, by the allopathic physician. It is the *Samson* among the fertilizers. I had not designed to spin this letter out to such lengths, and with the hope that even *one* among our farmers may be encouraged to commence the use of lime, I will close, by wishing you all the success in the good cause to which you are devoting your time that you can desire.

Truly yours,

J. M. M.

The writer of the following communication is not only one of the closest calculators, but one of the soundest practical farmers of our acquaintance. In the application of guano, did our land admit of its use, we know no one to whom we should prefer as a guide to Mr. Fife, and therefore no one to whom we would more confidently recommend the guano *ist*—if we may coin a word for the occasion.

The casual remarks too, the *obiter dicta*, as the lawyers would say, are also worthy of consideration, especially the views as to the proper mode of seeding wheat.—Ed. So. Pl.

For the Southern Planter.

ON THE USE OF GUANO AND ITS PERMANENCY.

Mr. Editor,—It is supposed, from the time I have been using guano, and the quantity I have put in every year with wheat, that by this time I ought to be able to give some information as to its use, but especially its permanency as a manure. In answer to a good many letters which I have received within a few months past, I will give my own practice in the use of it, not doubting but that many farmers understand its use better than I do, although they may have used less of it than I have done.

MANNER OF PREPARING IT FOR SOWING.

Having sifted the guano, we take what will not pass through the sieve, and spreading it on the barn-floor, rub it down with a log drawn by a horse—the log is five feet long, with a pin driven into each end, when a log chain is stretched from one pin to the other, to the centre of which the swingletree is fastened, and thus a breadth of five feet is rubbed down everytime the horse goes round—soon making it fine enough to be sown. I have never, but once, used plaster with it, supposing it best to apply the plaster to the surface after the wheat is sown on the ground, that if it were true that plaster prevented the escape of ammonia, then it would be the best policy to place the sentinel at the door, where, if Liebig tells the truth, he would work both ways, and the guano be undisturbed by his operations. The quantity used is about two hundred pounds per acre.

THE LAND BEST ADAPTED FOR IT.

The finer land can be made, previous to the sowing of guano with wheat, the better. For this purpose I plough up as much land as I can for oats. After sowing the oats in the spring, I cover over all the galled places with straw, taking care not to leave it too thick, but spreading it evenly on the ground, so that the oats may grow up through the straw. This will save the land from washing, supply a little organic matter to the land, and secure the wheat and clover. Land can always, in the driest weather, be ploughed after oats, and, next to tobacco, leaves the best tilth for wheat. Just before sowing, I either run the harrow over the land, or the above mentioned log.

MANNER OF PUTTING IN WHEAT AND GUANO.

For reasons which I shall give, I always plough in both wheat and guano with a one horse plough, and leave the land, as the plough leaves it, undisturbed by either harrow or roller. I begin laying off the land eighteen feet from the outside, all round the field, so that when sowed, the ploughs can go on without leaving any furrow till they finish the field in the centre, thus by going twice in the eighteen feet, the sower can manage to cast the guano nine feet at a throw; and, generally speaking, we can turn the land down the hill all the way, till we finish the field. Any person can observe, after a rain, that a harrow has left a good deal of wheat uncovered: for the same reason it will leave the guano uncovered. It is too costly an article not to get all the benefit from it we can; and it is only when covered over with the earth, in our climate, that we can expect its salts to be detained for food to plants.—On the other hand, to turn it down with a three horse plough, or even a two horse plough,

where there is so much clay as there is in our land, is to place it where it will be detained by the clay immediately in contact with it. And this, perhaps, may account for its failure on lands which not being equally balanced, do not admit of its influence being diffused through the soil. First, then, after covering the wheat and guano with a one horse plough, (and both ought to be covered,) it is unreasonable to be uncovering them, which a harrow is sure, in some measure, to do. Second. No land runs together in the fall and winter so soon as land made fine with a harrow. Let any one take two lots in a garden, in the fall, by way of experiment; let him dig them both, leaving one raked fine, the other left rough. In the spring the advantages will be vastly in favor of the last, while the other must be dug again, or it will be in bad tilth all the summer. Indeed, if there be any truth in the atmosphere acting and imparting to it a supply of food for plants, then a rounding surface must be preferable to a smooth one. The one being friable, the other crusted over—the one with its pores all open, the other glazed and repelling the gases as they approach for admission. Third. Complaints are often made that clover seed fails on wheat lands; and this is either ascribed to the late frosts killing it in the spring, or to the drought of summer, drying it up, and I consider it a serious loss to the farmer who has used guano to fail in his clover crop. Now the advantage is altogether in favor of land left as the plough leaves it over that which is harrowed, both as it regards drought and frosts. The seed has not only a safe deposit on a friable soil, but the crumbling edges protect it in a measure from cold and drought. I can safely say where I have put plenty of cloverseed, though there be mould at all, I have rarely failed in clover. Fourth. Rains do not injure a surface left by the plough as they do lands left by the harrow. Water in falling on the one surface percolates downward into the subsoil; in the other it runs off like water from a duck's back.' It has always been the experience of our most observing farmers, aside from the use of guano, that wheat grows much better when put in with the shovel plough than by harrowing. What then, it may be asked, makes the farmer put in wheat with a harrow? Because it takes longer time to put it in with the plough in the first place, and because it looks better in the winter and fall, in the second. To the first we have nothing to say, only let that on which the guano is put be ploughed in and left to get the advantage, both to the wheat and clover. To the other, we reply, it is only the looks; the smooth surface shows you every inch. It is as good on the ploughed land; but the surface hides it from you till spring advances, when it will tiller and grow and yield beyond harrowed wheat; and when the wheat is off the clover is sure to follow; whereas, in all likelihood, the smooth surface shows only here and there a bunch, and that in a sickly condition.

I may here remark that if any person has succeeded in making a perfect gall rich with guano they have done more with it than I can. To see any permanent benefit there must be organic matter sufficient to form at least some mould. If the soil be there and be poor its poverty has arisen from the fact of taking out and returning nothing. In our poor soils the great deficiency arises from the crops having taken out what was never in them to any great extent, viz: ammonia and the phosphate of lime. Now it appears that the farmer who has to purchase these two articles cannot get them cheaper in any other form than that of guano: and as ammonia sells at eight times more money than phosphate of lime, it follows that the guano that has the largest amount of ammonia in it must be the best, and of course ought to sell the highest. It would appear then that if these two things are put back into the soil we are supplying it with the food of plants of which it had been deprived by previous cropping. This, then, being admitted, it would necessarily follow that the crop of wheat could not take up the amount of both these articles. Say that the two hundred pounds of guano had only twenty-six pounds of ammonia and between seventy and eighty pounds of the phosphates, no one crop would require all to mature it. This might be a sufficient answer as it regards the permanency of guano.

As I have had a good deal of experience in buying manures I can say that if the same amount of money is laid out in buying guano that would be required in buying stable manure to go over an acre, the growth after guano would be equal to the stable manure, while in all probability the wheat would be better on the guanoed acre. Now if they were only both equal in their effects still the labor is greatly in favor of the guano. It was with difficulty, when I lived at Rock Hill, that I could haul from Charlottesville, though less than a mile distant, enough manure to go over eight acres of land in one year. Now with less labor I can go over fifty acres in one year, and this year have gone over ninety or one hundred acres. But in buying stable manure you very often get a worthless article. The ammonia all driven off by fire-fanging, so that you might as well put as much chaff on the land.

That which will lead the farmer to suppose that guano is not a permanent manure will, I expect, always exist. It may be necessary to explain this. A farmer buys two tons of guano which he puts on twenty acres of land: the balance of the field he sows in wheat without guano. On this field he sows clover seed and as soon as the wheat is taken off, hogs, sheep and cows are turned in. To his great surprise he sees next year as much growing where there was no guano as where he put his one hundred pounds, and draws the conclusion that the guano does not last over the first crop. What can the matter be? Why, plainly this:

every thing from a pig to a steer knows where sweet rich grass grows, and there they continue until every thing is eaten off, and the poaching finishes the soil by knocking the life out of it. The other part is luxuriant in briers and sassafras bushes which neither steer, cow nor sheep will touch while a spire remains that has been guanoed. Now how is he to proceed in the use of guano when the first crop barely pays him, and wheat at eighty cents will give him no profit at all. It can only be done by keeping stock off and giving back to the field the crop of clover, which, in return, may pay him in the crop of corn. In this way he may go on improving his land by degrees with the use of guano, unless his land be like that in the neighborhood of Tarnaway Castle, built by Thomas Randolph, the nephew of Bruce, altogether sand on which nothing will grow. It is the scene of a great part of the tragedy of Macbeth where he and Banquo met the weird sisters that gave him so many fatal promises. But from my own experience no land is more certain of improving under the least attention than our Albemarle lands. Should the land be clay it must be made fine before guano is applied, and both guano and wheat put in near the surface. If it be light, loamy land I have put both in with a two-horse plough, and it does very well. My only fear with regard to guano is that we shall get an article that will be destitute of the amount of ammonia which is its chief value. If it be said to come from Peru it is marked No. 1, regardless of the amount of ammonia. When Dr. Ure first analyzed it, he found seventeen per cent. of ammonia in it, but now it is often sold as No. 1, when less than thirteen per cent. is found in it. The quantity of stable manure which I have put on an acre of land and hauled from town at the cost of a dollar a load, (the body of the waggon holding fifty bushels,) was twelve loads: this would require two hands and two horses for two days. In short days they could not do it. The expense was at least, by the time it was spread, eighteen dollars an acre; and, taking one lot of manure with another, three hundred pounds of guano was equal for the wheat crop, if not better, and though clover after it might not be altogether so good, yet the difference between seven dollars and fifty cents and eighteen dollars is immense; and allowing nothing for the expense of hauling, yet the difference between seven dollars and fifty cents and twelve dollars is no inconsiderable item in favor of guano. Besides all this, unless the roads were in fine condition two horses could not haul a full load, and consequently you have to pay for what is taken by the load, whether the waggon be full or not, and it would sometimes require fourteen loads to go over an acre at an expense of fourteen dollars, without counting the wear and tear of teams and the time lost. In short, I have never seen the time that I had not full employment for my team on the farm without going after manure, nor a day when I could not get two dollars and fifty cents for a two-horse waggon and driver, if I should choose to hire them out. I think I have kept within bounds when I have made the cost of manuring an acre of land amount to eighteen dollars; and even at that price, unless the manure was very good, the land would not be enriched; and when it is considered that stable manure as soon as it is thrown out of the stable throws off, by the heat that is generated during fermentation, its most valuable ingredient, it becomes, of all manures, the most expensive at the present prices. Now as phosphoric acid is generally in less quantity in the soil than any other substance necessary to the nutrition of plants, and this ingredient is in large abundance in Peruvian guano, it follows that even at the very high price of guano it is by far the cheapest manure that can be bought. And it seems to me to be evident that if the land possess the power to detain the ammonia that no one crop of wheat can take out the amount of ammonia that is contained in two hundred pounds of guano, and consequently, the following clover crop must be benefited. So I have found it. Moreover, I have found on poor land, by the use of three hundred pounds of guano, a large crop of wheat the first year, and a heavy crop of timothy the second; but then not a hoof was allowed to touch it. I have also, where two hundred and fifty pounds were sown on poor land, got a large crop of wheat, and the second year cut a fine crop of clover.

JAMES FIFE.

For the Southern Planter.

HOLLOW-HORN.

Mr. Editor,—I have just read the article of our friend, Dr. Minor, on Hollow-Horn. If he had had the same experience in the disease that I have he would have told you that in very acute cases free bleeding was the only efficient remedy, and that cloths dipped in spirits of turpentine and laid just by or on the crest, and well burned with a hot iron, (even to making sores,) was a much more powerful adjunct than a poultice of mullein and bran. The case mentioned by him was by no means acute in the first instance, and would, probably, have yielded to an application of spirits of turpentine. Had it been an acute case the cow would have fallen down and remained in the same place until relieved by bleeding or death;* for but little reliance is to be placed in boring or sawing the horns, and I think had best be let alone entirely, as maggots some-

* When the cow is thought to be entirely cured in one of these severe cases it should never be penned again at night during that summer, as for a long time it is unable to stand the heat of the sun, and only feeds late in the evening and at night, retiring to the best shade it can find during the day.

times get in and do irreparable injury.* The bolusis of meal, herrings or frogs, may also be dispensed with.

The Doctor has, without knowing it, furnished your readers with the best prescription that I have ever known tried for the treatment of the bloody murrain, or distemper, as it is sometimes called in the counties of Hanover, &c. For seven or eight years that I lived in that region of country I used the bleeding and Glauber salts with great success in the treatment of that terrible disease.

I have written the above simply for the purpose of adding my experience to that of our friend, who lays down the principle of treating the disease in such a manner as to leave no doubt of its correctness.

THOMAS GARLAND.

January 19, 1852.

For the Southern Planter.

TOMATO PLANTS.

Mr. Editor,—I have been often asked for my method of raising tomato plants. In the small way for twenty-five years I have never failed to raise as many as I have wanted, and often too large to plant before I could venture to transplant them, (say from ten to fifteen inches high,) compelling me to raise my glass frame, as they should never touch the glass when there is frost. I make a frame or box three feet square, well put together, of good plank, one and a half or one and a quarter inches thick, and ten or twelve inches wide, and as it is likely to spring by warping, small bits of tin may be sprigged on the corners of this frame. I fit another on this, made of three-quarter inch plank of same size from out to out—twelve inches deep on one side and six inches deep on the opposite side, sloped off to receive a glass frame or sash. I then nail strips upon the corners of the bottom frame, (two at each corner,) to extend high enough up to receive the top frame and sash, forming a rabbit to keep them in place. I also nail strips around the top of bottom frame, extending one and a half inches above it, to prevent air from passing through the joints where the two bottom frames meet. My frames now being ready, (I need not give any description of the sash or glass frame to go on top,) between the 1st and 10th of March (not before, or plants will be too forward,) I select some spot in my garden, fair to the sun, lay down my first frame on a level spot and fill it with long, rough, fresh stable manure, treading or pressing it in all over alike, but not too hard; then two persons raise the box gradually, keeping it level, until the bottom is nearly to the top of the manure, then fill it as before, and so on until I get it as high as I wish it, say three feet, and then raise it again so as to leave a space of about seven inches. I then (in order to prevent the box from slipping down) drive four sharp sticks, eighteen inches long, one on each side about the middle, and close under the frame, into the manure, turning the points considerably down, say a slant of twenty-five or thirty degrees, so that as the manure settles all may settle together. I next fill up the box five inches more with some rich virgin earth from the woods, (which is light and has no grass seed in it,) making this very fine, and lay it off in drills six inches apart, and in these drills I carefully put three seed in a place, two inches apart; (four inches would be better, but I should not have plants enough,) covering them very shallow, or they will be too long coming up; they should be up in five or six days. Now put on the next frame with low side to the south-east, and then put on your glass frame. Next morning I get from my farm-pen a watering pot of fluid which has drained from the manure, and put that on my bed. It must be closely attended to, otherwise it may, after two or three days, become so hot that it may kill the germ when sprouting or the plants after they are up. If too warm raise the glass frame in front a few inches, putting something under it. As soon as the plants are fully up I take out one at a time, until I leave but one in a place, and if any place is deficient I supply with one I draw out. I water my bed every night, and in the morning, (after the plants are up,) if the day is fair and tolerably pleasant, about eight or nine o'clock I take the glass frame entirely off, putting it on again in the evening; and as they grow up and begin to have four or six leaves, in a mild day, if the sun is shining, I take off both of the top frames. When they get four or five inches high I disregard the wind, unless it be very cold, or unless it blows hard enough to prostrate the plants. At this age of the plants I dust fine plaster over them occasionally in the morning, when they are moist; and I also loosen the dirt between the drills and with my hands carefully hill up or put dirt to the plants, and then fill up the space I have made between the drills with a mixture of equal parts of the same sort of earth the bed is made of and leached ashes. By thus exposing the plants to sun and air I find myself soon in possession of one hundred and eight fine, healthy, strong, vigorous plants, looking as hardy, and in every way as luxuriant, as if grown on a rich soil in a warm season—very unlike some I have seen from hot beds, sown broadcast, in patches thick and thin, and so very feeble and slender, and so tender that it seems difficult to get them to live when transplanted; whereas, my plants seldom droop at

* Frequent observation has convinced me that in all cases of general fever or sickness the cow ceases to ruminate, not only because of the sickness, but also because it ceases to gather the food on which to ruminate. The observation is perfectly correct, that when the animal is relieved the cud will be restored as a matter of course.

all, if care is taken in transplanting them. But, like every thing else, they require constant attention to insure success. I *never* leave my hot bed open at night, no matter how warm; and I never permit a hard shower of rain to fall on the plants. To insure them from the cut-worm, as I set them out I wrap a small bit of paper around the stalk, loosely tied with a yarn string, putting dirt a little above the lower edge of the paper. I omitted to state I always cover my glass frame with thin plank to guard against cold, storms and other accidents.

W. TIMBERLAKE.

Belle Air, Feb. 13, 1852.

THE SOUTHERN PLANTER.

RICHMOND, MARCH, 1852.

TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

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POSTAGE ON THE PLANTER.

The following are the rates of postage on the Planter, *per quarter*, for the distances annexed—to be paid quarterly in advance:

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VIRGINIA STATE AGRICULTURAL CONVENTION.

We devote all the space we can spare to the proceedings of the Agricultural Convention which assembled on Thursday, the 19th of February, and adjourned on the following Saturday. The Convention was not large, and but few counties were represented. Albemarle had some thirty members—no other county more than two or three, and the balance, being by far the larger portion of the State, none at all. The farmers of Virginia seem to be asleep. Of the many, we think a majority of the body, who are in the Legislature a very small portion attended. But still the men who did come, came to *work*. They were nothing daunted by the thinness of attendance, because they knew that all the farmers of the State would sanction their efforts, and because they hoped that the Legislature would have intelligence enough to perceive and liberality enough to satisfy the wants of agriculture. Whether or not they have judged rightly in this latter regard remains to be seen. A bill, drawn in accordance with the wishes and instructions of the Convention, has been offered as a substitute for the bill now before the House, by Mr. Stuart of Fairfax. It was not offered in time for us to publish it, nor is it necessary, as it will, most probably, be amended, or rather altered. We may say, however, that it provides for an appropriation by the State, conditioned upon an equal individual contribution, provided, that the latter shall not be less than five hundred dollars; and, provided, that the State subscription shall not exceed in any one year fifteen thousand dollars. This latter amount it is not hoped that we can obtain since we cannot yet venture to predict an individual subscription of that sum. But in a few years things will work better, and when our machinery is perfected we shall expect that many thousands will contribute to swell the ranks of the Society. It is proposed to expend this money in premiums, based on principles of real merit, on inquiries into the agricultural condition of Virginia, and collection of statistical facts, and on matters of science connected with agricultural improvement. We hope that this subject will be duly considered by our readers, and if they approve of such a bill that they will at once write to

their respective delegates and urge them to vote for it, and give them solid encouragement to do it. The taxes are to be raised this winter, and the Legislature is very tender-footed on the subject of appropriations. It is, perhaps, unfortunate that it was necessary to make our application at this time, but not to do it now would be to defer it for two years longer, and such is the condition of agriculture in Virginia at this time, that not a moment should be lost in obtaining for it the aid it needs so much. To help the members out of their extremity we propose to the farmers to pledge themselves that whenever in any county the re-election of its delegate is objected to on this ground that they will vote for such candidate *regardless of his politics.* If it is necessary to raise a tax for our benefit, let it be done. It will be our duty to see that no demagogue gets into public life in opposition to our interests.

The President of the Society is EDMUND RUFFIN of Hanover. His energy and devotion to agriculture, and his distinguished services, guarantee a faithful discharge of his duties.

The Society already numbers (24th of February) one hundred and twelve members, and we have no doubt that if proper exertions are made we can easily induce some thousands to subscribe.

On Thursday evening Mr. Willoughby Newton, himself a distinguished farmer, made a very handsome address to a large audience in the Hall of the House of Delegates. We regret that we have no room to insert it. Its object was to show to the farmers the unsurpassed natural advantages of Virginia, and the skilful manner in which a portion of her people had availed themselves of them. On the first branch of the subject we fully agreed with Mr. Newton. on the last, without disputing at all his individual achievements, which we believe to be remarkable, or those of his section of country, Tide Water Virginia, which are certainly very considerable and very creditable, we yet incline to think his picture too favorable, whether absolutely or relatively considered. But in this candid criticism, we would not be thought to detract at all from the ability or patriotism of our distinguished friend.

At the meeting of the Executive Committee which is to be held on the 19th of March, a Constitution will be reported, to be prepared in accordance with the instructions of the Society. We shall endeavor to lay it before our readers.

CLOVER DOES *NOT* EXHAUST LAND.

We have been asked once or twice what we meant by saying that clover exhausted land, and have heard that some of our friends have been asked the same question. We reply that we have not said so, and must have expressed ourselves very infelicitously to have conveyed such an impression. We said, or meant to say, in the article in our February number, on "Farming in Tide Water Virginia," that *the cultivation of clover, particularly when attended with the use of lime in rapid succession and alternation with the usual cereals, if unaided by the use of other manures,* produced ultimate exhaustion, because the clover afforded the food for the wheat, for instance, which food being abstracted by the wheat, must, in time, become deficient in the soil unless replaced by other means. So that *the wheat is the exhauster* and NOT the clover. The lands in Albemarle have been clovered some forty years, and clover is still used among us. In fact, as we jocosely but truthfully observed to a friend, some time since, there is no man in Albemarle, that goes into good society, who does not sow clover seed. We shall return to this point again when we have more leisure. At present we are pretty well used up by the labors of the Convention, and beg to be excused.

For the Southern Planter.

WHEAT-REAPERS—SAUNDERS' WINNOWER.

Mr. Editor,—Some ten years ago I obtained possession of an old tobacco plantation which had been subjected pretty thoroughly to the common process by which the best lands of the tobacco region have been impoverished. The last proprietor, however, had practised an improving method and had reclaimed a good portion of the exhausted land, chiefly by means of farm-yard and stable manure. Adopting his practice I continued to strip the little forest land of its annual deposit of leaves, to make

as much manure as possible; and by composting these in the pens and yards with cornstalks, I contrived not only to keep up the tobacco lots, but also to enlarge them. But the obvious effect of this practice was the general, though gradual, deterioration of forest land and cornfields; and about five years ago I attempted to increase the crop of wheat, as an essential part of a system of more rapid and extensive improvement. Since that time this crop has been doubled, and the land is manifestly improved, while its average income is certainly not diminished. This has been effected chiefly by deeper ploughing, by manuring new surfaces for tobacco, and by a limited use of guano on exhausted land. Clover and plaster have been used, but with partial success; and I am disposed to believe that until I can afford to apply large quantities of lime, these agents will not prove very profitable. Guano has been used cautiously. In the autumn of 1849 about half a ton was ploughed in on some six acres of the poorest land, and seven bushels of wheat sowed upon it. The crop was injured by rust, but yielded about sixty bushels of good grain. A strip of the same land, sowed without guano, hardly produced as much as the seed; and the little it did produce was of very inferior quality.

Last fall about one and a half tons were put in, by two-horse ploughs, on a thin field that had been fallowed with three horses, and the yield, though reduced by the ravages of the fly, would not be discreditable to fair tobacco lots. In this case one part of plaster was mixed with four parts guano and four bushels of the compost put on an acre.

In both cases clover was sown in the spring but did not succeed well in either. The land is manifestly improved.

By these experiments and by others' experience, I am satisfied that it is safe practice to apply guano for wheat, on as much poor land as can be sowed in good time, after having seeded all the tobacco lots and all the fallowed land that belong to the year. No doubt, taking a term of years, it would be safe to use it further, but I believe no one will have cause to regret that he has applied it to this extent in any year. I would sow my tobacco lot and the regular portion of fallowed land, and then make out a full crop of wheat by putting guano on the poorest parts of the plantation.

But, Mr. Editor, while the way seems plain enough for an increase of the wheat crop, there is a growing difficulty ahead. After the crop is made it is hard for a *planter* to secure it in good season. Even if the weather be what we would have it, a heavy crop of wheat cannot be "saved" by the regular plantation force without considerable loss—and if the weather be unfavorable for harvest a great loss must be borne. Nor is it possible, at least hereabouts, always to get hirelings for the harvest; the supply of these is less than the demand. Now, if we could get a good reaping machine this difficulty would disappear, or be very much diminished. I have tried M'Keever's reaper, put up in Richmond, but it failed; and while I am confident it may be improved and made very valuable, I am equally confident that *as it is*, we cannot afford to use it. It cuts beautifully, perfectly, while it cuts at all; but it is impossible to make it cut regularly on without interruption. And while it works at its best rate it cuts no faster than five cradlers, and requires at least ten good binders besides the driver and the raker!

Recently you said that M'Cormick's is the best reaper yet invented, but you refuse to commend it until its price is reduced: did you mean that the farmer cannot afford to pay that price—or simply that it pays more than a fair profit to the patentee? Can you not give us such a description of the machine, with its price, as will enable us to judge whether we may use it profitably?

As not foreign to the subject matter, let me say a word of Saunders' winnower. It is intended to clean wheat that has passed through a fan mill; and its principle is so familiar, its construction so simple, and its operation so successful, that one is made to wonder it was not invented when men first thought of a fan mill. Every farmer who wishes to make his seed wheat clean ought to have it. Mr. Haxall of Richmond, esteems it very valuable to millers, and I would not be without one in my mill for three times what it cost me.

Respectfully, yours,

T. T. T.

Prince Edward County.

The author of the communication, signed "T. T. T." in a private note requests us to give a description of M'Cormick's reaper.—We shall endeavor to do so in a short time, or as soon as we can procure a proper description from some one more conversant with mechanics than we are. Since writing the short notice to which our correspondent refers, we have found that there is a very considerable disagreement among experienced farmers as to the superiority of this reaper over Hussey's; and we have seen one gentleman, and heard of others, who, after having tried both, or witnessed their operation, have given up M'Cormick's altogether in favor of its rival.

When we refused to commend it we did so because we thought the price too high for the work necessary to construct the machine, and too high for the labor it accomplishes. Such is also the opinion of a friend of ours who has used and still uses it under the most favorable circumstances, to wit: on smooth and level lowgrounds. Certainly an inventor should be remunerated as well for the expenditure of

ingenuity as for the outlay of capital; but that forms no excuse for extortion.

Like all other reapers yet invented, it is a complicated piece of mechanism, liable to get out of repair, and requires careful management; when out of repair, there are not many farmers who can fix it up; and if any of the castings break it may be impossible to replace them until too late. On rough land, such as ours is, where it would be likely in its progress through the grain to meet with many obstructions, and with as little skill in mechanics as we possess, we should consider it indispensable to employ a competent workman to follow the machine through the harvest. And there are many farms like ours; and many farmers who possess no more skill than we do.

On some of the large estates upon our rivers, the James and Pamunkey, particularly, this reaper and Hussey's are both used. The gentlemen who have used them speak well of their performance. What precautions they take against accidents, not very likely to occur on such farms, we know not; nor what remedies they have when they do occur. One of the most eminent farmers of that country rejects them, from their complicated structure. He prefers the old method to the uncertainties which, in his opinion, attend the new. We know of only three reapers having been introduced in Albemarle. Of these two were abandoned after the first crop: we are not aware that the third is still in use. We think they met with no better fate in that heavy wheat growing district, the Green Springs, though the land there is probably not more rolling than many a prairie over which they sweep. Here, as there, it is always a difficult matter to hire good cradlers, who, in spite of their boasting, generally shirk a heavy harvest, and are only lured to it by high prices. In the Green Springs it is probable that the sum paid for hirelings on several estates exceeds the cost of the reaper. Where there is no such assistance to be had, then the reaper, whether desirable or not, must be resorted to.

As a *substitute* for labor this machine may in some cases be necessary, but so far as its exploits have been tested it does not *save* labor, in the sense in which that phrase is commonly understood. In a very interesting article on agricultural dynamics, in the Transactions of the New York State Agricultural Society for 1850, we find the following:

"Well constructed machines for saving human labor by means of horse labor, when encumbered with little friction, will be found to do about *five times* as much work for each horse, as when the same work is performed by men. For example, an active man will saw twice each stick of a cord of wood in a day. Six horses with a circular saw, driven by means of a good horse-power, will saw five times six, or thirty, cords, working the same length of time. In this case the loss by friction is about equal to the additional force of attendance on the machine.

"Again. A man will cut with a cradle two and a half acres of wheat in a day. A two-horse reaper should therefore cut, at the same rate, ten times two and a half, or twenty-five acres. This has not yet been accomplished; we may therefore infer that the machinery for reaping has been less perfected than for sawing wood. It should however be remembered that great force is exerted, and for many hours in a day, in cutting wheat with a cradle; and therefore a little less than twenty-five acres a day may be regarded as the maximum attainment of good reaping machines when they shall become perfected."

But the reaper does not ordinarily cut more than fifteen acres a day, and requires a shifting team at that, as one pair of horses cannot stand the pace necessary to a proper execution of the work. So that according to the above data, and not counting the driver and raker, who may very fairly be offset against the wheat lost by the cradle and saved by the reaper, it does only one-fourth of the work it ought to do in order to rank it as a labor-saving machine. But admitting it to be so, its cost is much greater than the cost of many machines which are eminently labor-saving, the wheat machine, for instance. Under the old mode of flailing wheat, a hand could usually by hard work get out about twelve bushels a day, somewhat more or less, according to the condition of the grain and straw. But J. B. and J. E. Smith of the Green Springs, county of Louisa, manufactured a machine which, with eight horses and fair attendance, easily threshes four hundred and fifty bushels of wheat in a day, and has threshed out with full attendance seven hundred and thirty measured bushels, and stopped work an hour by sun; thus doing at its average the work of thirty seven hands, and at its maximum the work of sixty hands, equal for each horse to four and five-eighths

and seven and a half hands respectively. This machine is sold at two hundred dollars, whilst a reaper doing, by the same data, less than one-fourth the work, costs five-eighths of the money: in other words, *other things being equal*, it ought to cost fifty dollars, but does cost one hundred and twenty-five, or seventy-five dollars more than a fair proportion would indicate. We are not mechanics enough to say anything of the relative cost of the materials, though the smaller, and more complicated, and nicer work required by the reaper may cost more, to be offset, however, against the heavier weight of the castings in the wheat machine, and the greater amount of first rate timber required for them, and to be offset further by the less liability of the machine to get out of order, and the greater facility for repairs, and, lastly, by the variety of uses to which the horse-power may be applied, such as sawing wood, for instance, (a very valuable use to which we are now putting ours,) cutting up straw, stalks, &c.

For these reasons we think the price of the reaper, of all reapers, too high, as is the price of nearly every agricultural implement. We have given the principles upon which our opinion is founded, and its correctness must stand or fall with them. We invite a candid examination of it. And if the agricultural community agree with us, we respectfully submit that it would be highly proper that the State should offer a premium of one thousand dollars or five thousand dollars for the best reaping machine, to be fully tested by practical farmers and mechanics, and to be furnished, by means of agencies in different parts of the State, at a price not exceeding seventy-five dollars. In our opinion the money would get us what we want, and would be well expended.

Undoubtedly, reapers in their present state are valuable inventions, and we would not be thought to underrate them or to disparage the genius and merit of their inventors. But the question is *as to their value at the price now paid for them.* Individually we have decided against their use for this reason, and our subscribers have a right to our opinion when they ask for it, unless we give them something better in its place. The manufacture of reapers is now a monopoly in a few hands, and the jealousies of Messrs. M'Cormick and Hussey have not caused them to forget it. Perhaps in the end that may be better for the community. There is a demand for reapers now; but for cheap ones. We believe that nine-tenths of those who take an interest in them are waiting to buy until the price comes down, or until cheaper, but equally efficient, machines are invented, as they will be—cheaper and better—for such is always the course of invention. Had the present patentees so lowered the price as to have introduced reapers universally, it would have been hard to supplant their patents. As it is, they invite rivals to the field, and sooner or later they must yield to them. Thus monopoly always defeats itself. Already we have heard, but too vaguely for repetition, of superior machines, and many mechanics are trying their hands at them.

Whether T. T. T. and others shall choose, in consequence of the difficulty of getting hands—a difficulty which will increase with the heavy annual increase of our wheat crop—to purchase a reaper, is a question which each will decide for himself. But we hope he will allow us to suggest, what no doubt he is already aware of the propriety of doing, that he shall curtail his crops to the capacity of his labor, and not risk the "considerable loss" which it seems he now encounters in "saving" his wheat. In farming, far more than in any other pursuit, "a penny saved is two pence gained."

For the Southern Planter.

DISEASE OF SHEEP.

Mr. Editor,—After a severe or wet winter sheep are often lost by a disease known in England as the turnsick or sturdy. It attacks the one or two year olds; after that age they are said to be exempt from that disease. In France, where their sheep are not well attended to, the loss from this cause is estimated at a million a year. In England, at an average of two to three per cent. Such a per centage, with our careless management, would scarcely be observed, if equalized among our flocks, but it often falls with unequal severity on the best. This has occasionally happened in past years to some of my neighbors. I have myself this year lost ten out of sixty ewes in one flock, mostly those in their second year—none more than three years old. The order was such with those killed, before they had lingered too long, as to cause the tallow to be an object worth preserving.

When first taken they are dull, and scarcely

graze at all—ruminate fitfully and languidly—separate themselves from the flock—seek a stream or ditch and stand poring over the water until they tumble in—occasionally start as if frightened and run off from the flock. The sheep commences a rotary motion, moving in concentric circles, his head turned to one side, and always turning to the side to which his head is bent, he falls and scrambles up to recommence his motion, until he becomes exhausted and dies, if his death is not hastened by falling into some ditch or stream over which he has preferred to stand.

The disease is said by European writers to be caused by an insect, viz: "the Many-Headed Hydatid of the Brain." It forms its nidus in a sack of fluid between the membrane covering the brain and the brain itself, or imbedded in its substance. The size of the sack is from a pigeon's to a hen's egg. At first the fluid is transparent, but becomes turbid as the eggs hatch. The insect is about a line in length, and easily discerned with a microscope. Its effect is oppression upon the brain, causing absorption of its substance, and often of the adjoining portion of the skull, producing idiocy of the animal and blindness. With the educated veterinary surgeons of Europe they do not hope to save more than two in five of those attacked. This is done by trephining and extracting the sack. The ignorant shepherd swings his sheep round by the ears or drives him over a precipice; if his neck is not broken by the fall the sack may be burst; or thrusts a knitting needle or wire up the nostrils into the brain, where, if perchance, it strikes the sack, the animal may be relieved. Hogg, the Ettrick Shepherd, when a boy, was in the habit of knitting while tending his sheep. The sturdied sheep of his neighbors would annoy him by wandering off to his own flock; to drive them off, he would catch them and thrust his knitting needle up the nostril into the brain, when to his surprise they would spring up relieved and run off. This practice, however, upon subsequent trial, was found rarely successful, as the sack of the hydatid was not always in a position to be reached by the needle. Upon my own examinations I have not discovered the sack, the rude operation of the tenon saw always bursting it; but I found the brain highly inflamed, with extravasated blood in clots between its lobes. Yet the vacant countenance; the absence of furious delirium; its inoffensive deportment to its companions are not symptoms of inflammation of the brain; he is not lethargic, as in apoplexy, and lingers for days and weeks. After three years old it is not subject to the disease.

A flock of maiden ewes and wethers, kept upon a high, dry ridge, having access to a warm shelter and also the protection of a large straw stack, escaped entirely; but the flock in which the loss occurred ran in vale land, turfed and not wet, without shelter, and preferred to sleep near the house on the north hillside, exposed to north-east and north-west winds: occasionally they would be driven into the barnyard in very bad weather, then the yard was always muddy. The only preventive I can suggest is dry pastures and good shelter.

On farms where there is much waste land, to which sheep and cattle have access, particularly piney old fields, they find warm and dry situations, protected by the trees; but upon those without waste land at all, the fields are exceedingly bleak in winter, and animals without shelter suffer very much. Wet pastures, wet and severe winters and springs are considered as the cause of this disease.

As in the rot, a few hours' grazing of a flock upon particular spots, in districts where it prevails, will infect it with the fluke, an insect three quarters of an inch long, which breeds in the liver of the sheep, and destroys, by disorganization of this organ, every individual; so in this case the ova of the animalculæ, like minute seeds, may remain an indefinite period in the earth and be taken up in the food, and if they escape the danger of rumination, be conveyed in the chyle threading the minutest blood-vessels and capillaries until they reach, as a favorable spot for the nidas, the brain of the young sheep, weakened by exposure on cold, wet pasturage, &c. &c.

R.

TO CORRESPONDENTS.

Our contributing friends will not only confer a favor, but save us a deal of postage, by sending all communications, intended for the columns of the Planter, to the address of FRANK: G. RUFFIN, Shadwell, Albemarle Co. Va. When they are addressed to Richmond, we have to pay postage on them to the Editor, and back again. They will be more promptly attended to if directed as above.

THE PUBLISHER.

THE JANUARY NUMBER.

We were unfortunate enough to have nearly the whole of the mail of this number, on the route of the Central Rail Road Agent, lost. As soon as it can be reprinted it will be furnished to such subscribers as did not receive it. Although we struck off a large number of extra copies, in consequence of the large accession to our subscription list, the edition has been entirely exhausted. Such *new* subscribers as do not receive the January number along with the others, will also be furnished. We ask the indulgence of all, for a short time.

THE PUBLISHER.

STATE AGRICULTURAL CONVENTION.

At a meeting of the State Agricultural Convention, held in the city of Richmond on Thursday, the 19th of February, 1852, the Convention was called to order by Edmund Ruffin, Sr. Esq. and on his motion Willoughby Newton, Esq. was unanimously elected President *pro tempore*, and Charles B. Williams was appointed temporary Secretary.

The names of seventy members then present, were enrolled.

On motion, it was

Resolved, That Messrs. E. Ruffin, Sr. Thomas J. Randolph, F. G. Ruffin, Robert Grattan, Bernard Peyton, Jas. M. Morson and E. G. Booth be a committee to prepare business for the Convention.

Resolved, That Messrs. Franklin Minor, R. G. Morris, G. W. Richardson, Thomas Ritchie, Jr. and Dr. T. B. Anderson be a committee to nominate permanent officers of the Convention.

Resolved, That Messrs. Richard Irby, B. F. Dew and James A. Seddon be a committee to confer with the Executive Committee of the existing State Society to ascertain the terms upon which it is proposed that they shall co-operate.

Adjourned to meet in the Hall of the House of Delegates this afternoon at four o'clock.

—

The Convention re-assembled at four o'clock agreeably to adjournment.

The names of thirty-seven additional members were added to the roll of the Convention.

Mr. Minor, from the committee appointed to nominate permanent officers of the Convention, reported the following nominations, which were unanimously adopted:

For President, EDMUND RUFFIN, Sr. of Hanover.

For First Vice President, WILLOUGHBY NEWTON of Westmoreland.

For Second Vice President, BERNARD PEYTON of the City of Richmond.

For Third Vice President, THOMAS J. RANDOLPH of Albemarle.

For Fourth Vice President, RICHARD G. MORRIS of Amherst.

For Fifth Vice President, ROBT. GRATTAN of Rockingham.

For Sixth Vice President, EDWIN G. BOOTH of Nottoway.

For Secretaries, FRANK: G. RUFFIN of Albemarle, and THOMAS RITCHIE, Jr. of Henrico.

Mr. Ruffin took the Chair and returned thanks for the honor conferred upon him.

Mr. Irby, from the committee appointed to confer with the Executive Committee of the State Agricultural Society on the terms of co-operation, &c. reported that the Executive Committee manifested the most cordial disposition to co-operate with the Convention, and authorized them to say that they submitted the further organization and the further direction of the State Society to the discretion and wisdom of the Convention.

The report was referred to the Committee to Prepare Business for the Convention.

On motion of F. Minor, Esq.

Resolved, That the committee appointed to prepare business be instructed to inquire into the propriety of selecting a suitable agent to visit the different portions of the State, and make personal application to the friends of agricultural improvement, to become members of the State Society; or some other effective means of enlarging the number of the members of the State Society.

On motion of Mr. Morris of Amherst, the following resolution was adopted:

Resolved, That a committee be appointed to inquire into the expediency of petitioning the Legislature to amend or repeal the laws regarding the duties of the Inspector of Guano and Plaster.

The President appointed the following gentlemen the Committee: Messrs. Morris of Amherst, Newton of Westmoreland, Gaines of Hanover, Stuart of Fairfax and John Wood, Jr of Albemarle.

On motion of Mr. John Wood, Jr.

Resolved, That the Inspector of Guano and Plaster for the City of Richmond be requested to lay before the committee, having in charge the inspection laws under consideration, such facts touching the same as to him may seem expedient.

On motion, the Convention then adjourned to meet again on Friday morning at eleven o'clock.

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Friday Morning, Feb. 20, 1852.

The Convention assembled at 11 o'clock.

The names of five additional members were added to the roll of the Convention.

The President called Mr. Newton to the chair.

Mr. Ruffin, from the Committee to Prepare Business, made a report, recommending that the Convention establish a State Agricultural Society, to be called the State

Agricultural Society of Virg nia; that the officers shall consist of a President, six Vice Presidents, a Recording and a Corresponding Secretary, Treasurer, and an Executive Committee, to consist of the above officees and five other members to be elected annually, and committing the details of the organization of the Society, such as the preparation of a Constitution, the offering of premiums, &c. to the said Executive Committee, who are required to hold stated meetings, to carry into effect, by particular regulation, the general resolutions and instructions of the Society.

It is made the duty of the Executive Committee to apply to the Legislature for an act of incorporation, with provisions in the charter to authorize the sheriffs of the Commonwealth to collect the annual dues of the Society.

The first annual contribution of members of the Society was fixed at two dollars, and annually thereafter at one dollar, and life membership at twenty dollars.

Moneys derived from life membership and donations to be invested in State stock, and the interest appropriated annually to the use of the Society.

Mr. Morris of Amherst, from the Committee on the Inspection of Guano and Plaster, made the following report, which was ordered to be laid on the table:

The Committee appointed to inquire into the expediency of amending or abolishing the Inspection of Guano and Plaster, have had the subject under consideration and advise that a memorial be presented to the Legislature, praying that said inspection be abolished.

The Society proceeded to the election of Treasurer, that the members present wishing to unite with the Society might enter their names in the Treasurer's book. Gen. B. Peyton was elected Treasurer.

Mr. Edmund Ruffin offered the following resolutions, which were unanimously adopted:

Resolved, as the sense of this Convention, That the State of Virginia, and especially the cause of agriculture, has sustained, in the lamented death of Gen. Corbin Braxton, a loss that cannot soon be repaired.

Resolved, That with a full sense of his eminent merits, and of the loss which we deplore, these resolutions be entered on the minutes of the Convention, and a copy thereof be transmitted to his family as a feeble though sincere tribute to the memory of one of the most useful and estimable men that Virginia has produced.

The following resolution, offered by Gen. Richardson, was unanimously adopted:

Resolved, That this Convention most earnestly recommend to the farmers, mechanics and other householders of Virginia, that each one of them exert himself to extend the circulation of the Southern Planter, the only agricultural paper published in Virginia, more than any other adapted to our people, conducted with signal ability, and in every respect entitled to our zealous support. While thousands of dollars are annually paid in subscription to papers published in other States and of far less value to our agriculturists, our own modest and unpretending journal, edited and printed by Virginians, laboring with untiring industry and perseverance for our best interests, has hitherto been left by our own people to struggle for a bare subsistence. Let this indifference to those interests and to the sterling merits of the Southern Planter be instantly shaken off; let every man do what he can, and the paper will speedily be found where it ought to be, a fireside companion of every family.

The Convention then proceeded to the election of officers of the Society, when

Edmund Ruffin, Sr. of Hanover was unanimously elected President.

James M. Morson of Goochland, First Vice President.

Hill Carter of Charles City, Second Vice President.

Willoughby Newton of Westmoreland, Third Vice President.

Thomas Jefferson Randolph of Albemarle, Fourth Vice President.

Gen. P. H. Steinbergen of Mason, Fifth Vice President.

Robert Grattan of Rockingham, Sixth Vice President.

Messrs. L. E. Harvie of Amelia, Wm. Boulware of King & Queen, Edwin G. Booth of Nottoway, Wm. G. Overton of Hanover, and William H. Richardson of Richmond, were elected the Executive Committee.

Charles B. Williams of Henrico, was elected Recording Secretary, and Frank: G. Ruffin of Albemarle, Corresponding Secretary.

The Convention then adjourned as a Convention, but to meet again to-morrow as a Society.

Ed. Ruffin, *President.*

Frank: G. Ruffin, } *Secretaries.*
Thos. Ritchie, Jr. }

VIRGINIA STATE AGRICULTURAL SOCIETY.

The Society met by appointment of the Convention on Friday evening, the 20th of February, 1852, at half past seven o'clock.

The report of the Committee on the Inspection of Guano and Plaster, laid on the table in Convention, was taken up, adopted, and committed to Richard G. Morris, Esq. with instructions to prepare a memorial to the Legislature expressive of the opinion entertained by the Society that the inspection of these articles ought to be abolished.

On motion of T. J. Randolph, Esq.

Resolved, That committees be now appointed for the cities of Richmond and Petersburg, and hereafter by the Executive Committee, in their discretion, for the other cities and counties of the State, to call on the citizens and urge them to become members of the Society.

Committee for Richmond, Messrs. Hugh W. Fry, Edwin Wortham and John H. Claiborne.

Committee for Petersburg, Messrs. R. B. Bolling, Thomas Branch and Quinn Morton.

Ed. Ruffin, *President.*
Ch. B. Williams, *Rec. Sec'y.*

PLOUGHING.

From a letter received from a gentleman connected with the Hampshire County Society, we gather the following facts in relation to the trial of stubble ploughs, at the late exhibition of that society at Northampton. There were ploughs in use from four different manufacturers, but after a long trial, Ruggles, Nourse, Mason & Co.'s No 37 was decided to be the best, on account of its great ease of holding, and its superior work.

A feat never before performed in ploughing, was accomplished by one of the contestants, who used Stubble Plough No. 38 of the same manufacturers. Starting his horses at one side of the field, he set the plough, and then let it run by itself to the end of the lot, a distance of 35 rods. Then it was just touched sufficiently to guide it round to the next furrow, when it *set itself*, and went through without a hand being touched to it. This is a quality which has long been desired, and it is manifest that the plough which can do its work well without being held has little need of any other recommendation.—*N. E. Farmer.*

PAYMENTS TO THE SOUTHERN PLANTER,

From January 26th to March 1st, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

Edwin N. Palmer, to January, 1853, Wm. T. Watts, to January, 1853, Dr. Paul J. Carrington, to Jan. 1853, C. M. Adkisson, to January, 1853,	$3 20
Dr. Robert R. Barton, to January, 1853,	2 00
Dr. F. Carr, to January, 1853,	1 00
Richard O. Morris, to January, 1853,	1 00
Claudius Dickinson, to January, 1853,	1 00
Rev. W. W. Kennedy, to Jan. 1853,	1 00
Richmond Terrill, to January, 1853,	1 00
Henry S. Hathaway, to January, 1853,	1 00
Merit P. Sledge, to January, 1853, Powhatan B. Sledge, to Jan. 1853, Henry S. Mason, to January, 1853, J. J. Deal, to January, 1853, Carter Ball, to January, 1853, Dr. N. M. Osborne, to January, 1853,	5 00
E. Brown, to January, 1853,	1 00
Henry Curtis, to January, 1853, Wm. English, to January, 1853, Rob. G. Montgomery, to Jan. 1853, Dr. James Motley, to January, 1853, Henry Miskel, to January, 1853, James L. Lamkin, to January, 1853, Andrew Jackson, to January, 1853, Thomas Oldham, to January, 1853, James Yearby, to January, 1853, James B. M'Carty, to January, 1853, Jos. W. Shearman, to January, 1853, H. L. Layton, to January, 1853,	9 23
Geo. B. A. M'Carty, to January, 1853,	3 77
John H. Steger, to January, 1853,	1 00
Julian Ruffin, to January, 1853,	1 00
Edmund Ruffin, Jr. to January, 1853,	1 00
Mrs. Martha Cocke, to January, 1853,	1 00
Jesse Whitehead, to January, 1853,	1 00
Charles B. Williams, to January, 1853,	1 00
James C. Denty, to January, 1852,	2 50
Rev. A. B. Davidson, to January, 1853,	1 00
Wm. R. Hatchett, to January, 1853,	1 00
J. D. Massenburg, to January, 1852,	3 00
J. Lewis Brooke, to January, 1853,	1 00
Alexander Smith, to January, 1853,	1 00
Wm. Finch, to January, 1853,	1 00
Dr. Thos. J. Garden, to January, 1853,	1 00
James B. Ford, to January, 1853,	1 00
John T. Anderson, to January, 1853,	1 00
Rev. John T. Clark, to January, 1853,	1 00
George Woodfin, to January, 1853,	1 00
Dr. C. W. Wormley, to January, 1853,	1 00
Peyton S. Coles, to July, 1852,	1 00
F. K. Nelson, to January, 1853,	1 00
John Fray, to July, 1852,	1 00
Col. F. H. Smith, to January, 1853,	1 00
George W. Nelson, to January, 1853,	1 00
John A. Montague, to January, 1853,	1 00
Wm. K. Perrin, to January, 1853,	1 00

Samuel Ball, to January, 1853, $1 00
Wm. R. Taylor, to January, 1853, 1 00
J. C. Bruce, to January, 1853, 6 00
Col. Andrew Joiner, to January, 1854, 1 00
O. R. Funsten, to January, 1853, 1 00
A. A. Chapman, to January, 1849, 2 00
S. T. Brown, to January, 1852, 1 00
J. Warwick, to January, 1853, 1 00
F. M. Cabell, to January, 1853, 2 00
John Thom, to January, 1853, 1 00
H. Bear, to August, 1852, 1 00
Dr. D. M. Currie, to January, 1853, 1 00
Thomas L. Lea, to January, 1853, 1 00
W. J. Moore, to January, 1852, 2 00
James Hill, to January, 1853, 1 00
P. St. Geo. Cocke, (7 copies,) to Jan. 1853, 6 00
Wm. Gordon, to January, 1853, 1 00
Ro. W. Calloway, to January, 1853, 1 00
Dr. T. B. Anderson, to January, 1853, 1 00
J. T. Goodwin, to January, 1853, 1 00
Martin James, to January, 1853, 1 00
B. H. Dawson, to January, 1853, 1 00
A. D. Martin, to January, 1853. 1 00
Major Yancey, to January, 1852, 1 00
F. Thompson, to January, 1853, 8 00
Dr. Miles George, to January, 1853, 1 00
James M. Sublett, to January, 1853, 3 00
Elias P. Burnett, to January, 1853, 1 00
Isaac B. Edwards, to January, 1853, 1 00
Wm. H. Davis, to January, 1853, 1 00
L. W. Allen, to January, 1853, 2 00
Edmd. A. Pendleton, to January, 1853, 1 00
Henry Street, to January, 1853, 1 00
Robert G. Haile, to July, 1852, 1 00
Robert Brook, to January, 1853, 1 00
Dr. Thomas Meaux, to January, 1853, 1 00
Walker B. Blanton, to January, 1853, 1 00
J. M. Laidley, to January, 1853, 2 00
Capt. John Sims, to January, 1854, 1 00
Wm. E. Glen, to January, 1853, 1 00
John Marshall, to September, 1852, 1 00
F. Lewis Marshall, to January, 1853, 1 00
Fred. Gilliam, to January, 1853, 1 00
Peterfield Trent, to January, 1853, 1 00
Thomas J. Myers, to January, 1853,
R. S. Bonham, to January, 1853,
John L. Sanders, to January, 1853,
Wm. P. Creel, to January, 1853,
Thos. Copenhaven, to January, 1853,
Abijah Thomas, to January, 1853,
Jas. F. Pendleton, to January, 1853, 10 00
Nathaniel L. Cox, to January, 1853,
Ro. H. Richardson, to January, 1853,
C. F. M'Donald, to January, 1853,
E. A. Scott, to January, 1853,
Watkins Johnson, to January, 1853,
Wm. F. Campbell, to January, 1853,
John P. Stevens, to January, 1853, 1 00
Larkin S. Garrett, to October, 1853, 1 00
Nathaniel Tally, to January, 1853, 1 00
Charles H. Lee, to January, 1853, 1 00
Ro. H. Vest, to January, 1853, 1 00
Napoleon B. Richardson, to Jan. 1853, 1 00
Robert Burke, to January, 1853, 1 00
G. C. Trevilian, to October, 1852, 1 00
Wm Guthrey, to August, 1852, 1 00
Wm. H. Ott, to January, 1853, 1 00

Wm. S. Dabney, to January, 1853, $1 00
Dr. Charles Brown, to July, 1852, 1 00
D. C. Carver, to January, 1853, 1 00
B. P. Teel, to January, 1852, 1 00
M. B. Jarman, to January, 1852, 1 00
Dr. D. E. Watson, to January, 1852, 1 00
H. St. George Harris, to July, 1852, 1 00
James W. Dabney, to January, 1853, 1 00
E. P. Chamberlayne, to January, 1853, 1 00
C. C. Lee, to January, 1853, 1 00
Belfield Cave, to January, 1853, 1 00
Wm. A. Durvin, to January, 1853, 1 00
Wm. Durvin, to January, 1853, 1 00
Mrs. Susan A. Gardner, to Jan. 1851, 1 00
W. S. Kemper, to January, 1853, 1 00
Martin Tutwiler, to July, 1852, 2 00
Alexander Faison, to January, 1853, 1 00
John England, to January, 1853, 1 00
Dr. J. H. Ellerson, to January, 1853, 1 00
Thomas J. Blake, to January, 1853, 1 00
James C. Hobbs, to January, 1853, 1 00
G. Brent, to January, 1853, 1 00
Robert Wilson, to July, 1852, 1 00
Dr. R. C. Pritchard, to July, 1853, 4 00
Wm. M. Price, to January, 1852, 3 00
Elsey Fogg, to January, 1853, 1 00
P. P. Nalle, (cor.) to January, 1852. 1 00
R. Stringfellow, (corr.) to January, 1853, 1 00
Col. D. B. Hancock, to January, 1853, 85
John B. Ayres, to September, 1852, 1 00
Robert S. Ellis, to January, 1853. 1 00
J. W. Heptinstall, to January, 1853, 4 00
Wm. H. Ponton, to January, 1853, 1 00
T. C Moorman, to January, 1853, 1 00
H. M. Kirby, to January, 1853,
John H. S. Hubbard, to Jan. 1853,
Wm. Chaney, to January, 1853,
John Wilkinson, to January, 1853,
Isaac T. Oliver, to January, 1853,
Joel H. Tanner, to January, 1853,
S. C. Townes, to January, 1853, 10 00
Thomas Flippin, to January, 1853,
Wm. Wilson, to January, 1853,
T. O. Sogars, to January, 1853,
Isaac N. Dodron, to January, 1853,
Bird Dodron, to January, 1853,
Thomas Chaney, to January, 1853,
Frederick Payne, to January, 1853, 1 00
Woodson Hughes, to January, 1853, 3 00
N. B. Clarke, to January, 1853, 1 00
Reuben Blanton, to January, 1853, 1 00
W. H. Harrison, to January, 1853, 1 00
R. G. Morriss, to January, 1853, 1 00
Gustavus Wingfield, to January, 1853, 1 00
Capt Thomas Lang, to July, 1855, 5 00
E. F. Pinchbeck, to January, 1852, 1 00
Dr. George C. Scott, to January, 1853, 1 00
Col. C. B Killibrew, to January, 1853, 2 00
Dr. H. C. Worsham, to January, 1853, 1 00
Rev. W. C. Meredith, to Sept. 1852, 1 00
B. Wigginton, to January, 1853, 1 00
S. & M. Pennock, to July, 1852. 1 00
Thomas Hines, to January, 1853, 2 00
J. L. Deans, to January, 1853, 1 00
John H. Tabb, to January, 1853, 1 00
Geo. H. Dobyns, to January, 1853, 1 00
W. D. Mansfield, to January, 1853. 1 00

George W. Clarke, to January, 1853, $1 00
Patrick B. Carter, to September, 1852, 1 00
Andrew Mapwell, to January, 1853, 1 00
Elias Dodron, to January, 1853, 1 00
Wm. A. Bibb, to July, 1852, 1 00
George C. Gilmer, to September, 1852, 1 00
Thomas Garland, to July, 1852, 1 00
Eugene Davis, to July, 1852, 1 00
E. T. Jeffress, to January, 1853, 1 00
Wm. H. Nicholson, to January, 1853, 1 00
Mrs. L. W. Barlow, to January, 1852, 1 00
M. Harrison, to January, 1853, 1 00
W. H. C. Lovitt, to January, 1853, 1 00
Col. Wm. A. Dozier, to January, 1853, 1 00
A. N. Bernard, to July, 1851, 1 00
W. A. Leavitt, to January, 1853, 1 00
C. W. Montague, to January, 1853, 2 00
W. B. Montague, to January, 1853, 1 00
M. Davis, Jr. to January, 1853, 1 00
Bannister Coffee, to January, 1853, 1 00
H. W. Jones, to January, 1853, 5 00
James Newman, to January, 1853, 1 00
Mrs. Dr. W. B. Smith, to January, 1853, 1 00
Samuel T. Miller, to January, 1853, 1 00
E. B. Hunter, to January, 1853, 1 00
R. H. Sharpe, to January, 1853, 1 00
A. Aldridge, to January, 1853, 1 00
Wm. Robertson, to January, 1853, 4 00
Estate of J. M. Meriwether, to Jan. 1853, 1 00
Thos. Jellis, to January, 1852, 3 00
Wm. E. Glover, to September, 1852, 1 00
Miss Nancy Perkins, to January, 1853, 1 00
Samuel T. Chandler, to January, 1853, 1 00
John S. Rogers, to January, 1853, 1 00
Charles E. Kent, to January, 1853, 1 00
Archie Brown, to January, 1853, 1 00
Dr. J. N. Powell, to July, 1852, 1 00
E. R. Simms, to January, 1853, 2 00
Dr. Wm. Fuqua, to January, 1853, 1 00
Col. Isham Trotter, to January, 1853, 1 00
Col. Wm. T. Mason, to January, 1853, 1 00
Joseph Jones, to January, 1853, 1 00
Hubbard Minter, to January, 1853, 1 00
Garland Hargrave, to January, 1853, 1 00
Thomas Friend, to January, 1853, 1 00
Henry Deurson, to January, 1853, 1 00
Wm. Gibson, to January, 1853, 2 00
Wm. S. Harris, to January, 1853, 1 00
Thomas L. Pleasants, to January, 1853, 1 00
Bolling Jones, to January, 1853, 3 00
Wm. E. B. Ruffin, to January, 1854, 2 00
George H. Burwell, to January, 1853, 1 00
Joseph Gilmore, to January, 1853, 4 00
Thomas G. Burke, to January, 1853, 1 00
Henry Harris, to January, 1853, 1 00
W. Y. Hiter, to January, 1853, 1 00
Joseph Rock, to January, 1853, 1 00
Joshua Cannon, to January, 1853, 1 00
Archd. M'Lean, to July, 1851, 1 00
Edward M. Tompkies, to January, 1852, 1 00
W. W. Harris, to January, 1853, 2 00
J. M. Jeffress, to January, 1853, 3 00
Dr. John R. Garnett, to January, 1853, 2 00
H. C. Watkins, to January, 1853, 1 00
A. G. Jeffress, to January, 1853, 1 00
Richard Bagby, to January, 1853, 1 00
Wm. P. Peyton, to January, 1853, 3 00

David Shelton, to July, 1853, $2 00
E. B. Jones, to January, 1853, 2 00
Wm. T. Scott, to January, 1853, 1 00
Wm. Irby, (correction,) to Jan. 1853, 1 00
Charles Guerrant, to July, 1852, 2 00
Thomas D. Edmunds, to January, 1853, 1 00
Thomas Massie, to January, 1853, 1 00
John S. Woodson, to January, 1853, 1 00
Hilary Harris, to January, 1853, 1 00
Wm. Townes, to July, 1852, 2 00
R. D. Warwick, to January, 1853, 1 00
Robert Anderson, to January, 1853, 1 00
Wm. W. Watkins, to January, 1853, 1 00
Gen. W. H. Richardson, to Jan. 1853, 1 00
Major R. P. Brown, to August, 1853, 1 00
T. B. Robertson, to January, 1853, 1 00
R. C. Dickinson, to January, 1851, 5 00
Lewis W. Garth, to January, 1853, 1 00
John G. Hancock, to January, 1853, 1 00
Dr. James Latane, to January, 1853, 1 00
Joseph Farrar, to January, 1853, 1 00
W. P. Smith, to January, 1853, 1 00
James M. Morson, to July, 1854, 3 00
Thomas W. Meriwether, to Jan. 1853, 1 00
Rev. T. W. Sydnor, to January, 1853,
J. H. Dobbin, to January, 1853,
S. H. Pettus, to January, 1853,
Robert Scott, to January, 1853,
G. A. Cralle, to January, 1853,
Samuel Scott, to January, 1853, 8 47
A. Worsham, to January, 1853,
Eeward Farley, to January, 1853,
Dr. W. J. Harris, to January, 1853,
E. F. Williamson, to January, 1853,
Dr. R. E. Haskins, to January, 1853,
P. T. Spratley, to January, 1852, 1 00
Wm. H. Goodwin, to January, 1853, 1 00
Gen. H. B. Woodhouse, to Jan. 1853, 1 00
H. F. Woodhouse, to January, 1853, 1 00
Henry R. Franklin, to January, 1853, 1 00
H. B. Jones, to January, 1853, 1 00
Col. T. F. Wingfield, to January, 1853, 1 00
Richard M. Graves, to January, 1853, 1 00
Richard L. Farenholt, to January, 1853, 1 00
Wm. Mellock, to January, 1853, 1 00
James P. Anderson, to January, 1853, 1 00
R. H. Harwood, to January, 1853, 1 00
J. T. Baker, to January, 1853, 1 00
Elias T. Harris, to January, 1853, 1 00
J. O. Claybrook, to January, 1853, 1 00
Wm. Elsom, to January, 1853, 1 00
John A. Thurmond, to January, 1853, 1 00
A. M. Hobson, to January, 1853, 1 00
John D. Hobson, to January, 1853, 1 00
E. W. Shepherd, to January, 1853, 1 00
D. E. Jiggitts, to January, 1853, 1 00
Col. John Hargrove, to January, 1853, 1 00
James C. Spotts, to January, 1853, 3 00
Geo. D. Saunders, to September, 1852, 1 00
W. T. Wooton, to January, 1853, 5 00
Wm. S. Graves, to January, 1853, 1 00
J. A. Clay, to January, 1853, 2 00
M. P. Brooke, to January, 1853, 1 00
Thomas S. Hall, to January, 1853, 1 00
Samuel M. Wilson, to January, 1853, 1 00
J. Tisdale, to September, 1852, 1 00
N. B. Gay, to September, 1852, 1 00

John M'Alister, to January, 1853,	$1 00
Thomas Watkins, to January, 1853,	1 00
E. C. Griffith, to January, 1852,	5 00
E. G. Booth, to January, 1852,	2 00
John Hodges, to January, 1853,	1 00
W. B. Harrison, to January, 1853,	1 00
J. W. Brockwell, to January, 1853,	1 00
Randolph Harrison, to January, 1853,	1 00
Wm. Tompkins, to October, 1852,	1 00
G. B. Mill, to January, 1853,	1 00
J. R. Barksdale, to January, 1853,	1 00
Finch & Carlton, to January, 1853,	1 00
R. M. Glenn, to January, 1853,	1 00
Anderson Edwards, to January, 1853,	1 00
Ed. M. Anderson, to January, 1853,	1 00
Wm. L. Pannill, to January, 1853,	1 00
A. J. Perkins, to January, 1853,	1 00
W. W. Key, to January, 1852,	5 00
Gen. Alex. Brown, (2 cops.) to Jan. 1853,	3 00
Z. H. Brooks, to January, 1853,	3 00
Samuel Griffin, to January, 1854,	3 25
P. W. Grubbs, to July, 1852,	1 00
Capt. Edwd. Haskins, to January, 1853,	1 00

SANDY POINT FOR SALE AT AUCTION.

THE undersigned, prevented by engagements requiring his undivided attention elsewhere from residing on his farm, will sell publicly, unless previously sold privately, (and of which due notice will be given,) at the Bollingbrook Hotel, in Petersburg, on Wednesday, the 26th day of May next, at 11 o'clock, A. M. without reserve or regard to weather, that valuable, highly improved and heavily timbered estate, known as SANDY POINT, situated on James River, in the County of Charles City, Virginia, 45 miles below the City of Richmond, and 32 miles below the City of Petersburg.

This fine body of land contains 4,453 acres, and has been advantageously divided into four well located farms, with dwellings, commodious barns, &c. and into five valuable lots of timbered land, exclusive of an ample allotment of wood and timber for each farm.

Persons desirous of investing in lands of a quality not often in market, are invited to examine this estate.

Printed bills giving the qantities in the subdivisions, &c. will be furnished, and accurate plats exhibited to applicants.

Possession given of the timbered lands immediately after sale; of the farms, at the end of the year, with the privilege of fallowing and seeding wheat.

TERMS—One-fifth cash; balance in five annual instalments for the farms; for the timbered lands, one-third cash and three annual instalments; credit payments to bear interest, and to be secured by deeds and approved endorsed negotiable notes or bonds.

R. B. BOLLING.

Address to Petersburg, Va.

fe—tf PANNILL & SONS, *Aucts.*

VALUABLE AGRICULTURAL WORKS for sale by NASH & WOODHOUSE, Eagle Square.

The Complete Farmer and Rural Economist and New American Gardener, by T. J. Fessenden, in one volume, about 700 pages, cloth, gilt—$1 25.

Johnston's Agricultural Chemistry—a new edition, in one volume, 12mo. cloth, gilt—$1 25.

Johnston's Elements of Agricultural Chemistry—50 cents.

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Chemistry Made Easy for Farmers, paper—25 cents.

Southern Agriculture; or, Essays on the Cultivation of Corn, Hemp, Tobacco, Wheat, &c.—$1.

Dana's Prize Essay on Manures—25 cents.

Miner's American Bee Keeper's Manual—$1. Mail edition—75 cents.

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The American Architect, the cheapest and best work of the kind published in the world, complete in 24 numbers, at 25 cents each, or $5 for the work complete—$6 bound in two volumes.

Youatt and Martin's Treatise on Cattle, with one hundred illustrations, edited by Ambrose Stevens, Esq—$1 25.

Youatt on the Breed and Management of Sheep, with illustrations—75 cents.

Elements of Agriculture, translated from the French, by F. G. Skinner, adapted for Schools—25 cents.

Gunn's Domestic Medicine; or, Poor Man's Friend in Affliction, Pain and Sickness—$3.

mar—1y

UNION AGRICULTURAL WAREHOUSE AND SEED STORE.

RALPH & Co. No. 23 Fulton street, New York, near Fulton Market, Dealers in all the most approved Agricultural and Horticultural Implements, Imported and American Field and Garden Seeds, Ornamental Shade and Fruit Trees, Guano, Bone Dust, Poudrette, &c. Wrought Iron Ploughs, Trucks, Barrows, &c. &c. always on hand. Also, the Excelsior, or California Plough. mar 3t

TO AGRICULTURISTS.

MORRIS & BROTHER have received the following valuable Books, pertaining to Agriculture:

Elements of Scientific Agriculture, or the connexion between Science and the Art of Practical Farming. This was the prize essay of the New York State Agricultural Society; by J. P. Norton, M. A.

Elements of Agricultural Chemistry and Geology; by Jas. F. W. Johnston.

American Agriculturist, for the Farmer, Planter, Stock Breeder, and Horticulturist; by A. B. Allen; numerous plates. The 8th and 9th volumes of this most valuable work are received, also complete sets. Every farmer should have this work.

American Farm Book, on Soils, Manures, Drainings, Irrigation, Grasses, Grain, Roots, Fruit, Cotton, Tobacco, Sugarcane, Rice, and every staple product of the United States.—This is a perfect farmer's library, with upwards of 100 engravings; by R. L. Allen.

Farmer's Manual, with the most recent discoveries in Agricultural Chemistry; by F. Faulkner.

A Muck Manual for Farmers; by S. L. Dana.

Farmer's Land Measurer, with a set of useful Agricultural Tables; by Jas. Pedder.

American Husbandry.—Series of Essays on Agriculture, with additions; by Gaylord and Tucker.

Farmer's Encyclopædia; by Cuthbert W. Johnson.

Productive Farming, with the most recent discoveries of Liebig, Johnston, Davy, and others.

European Agriculture, from personal observation; by Henry Coleman. This is a very popular work.

Johnson's Chemistry and Geology, with their application.

Johnson's Dictionary of Gardening; by David Landreth.

London's Gardening, for Ladies; by A. J. Downing.

Squarey's Agricultural Chemistry, Bonssingault, Rural Economy, Buist's Kitchen Gardener, Landscape Gardening, and Rural Architecture; by A. J. Downing.

Fessenden's American Gardener.

American Fruit Book, with full instructions; by S. W. Cole.

Downing on Fruit Trees.

Theory of Horticulture; by Lindley.

Florist's Manual; by H. Bourne; 80 colored engravings.

Bridgman's Kitchen Gardener.

In addition to which, Morris & Brother have all of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—1y

TO THE AGRICULTURAL PLANTERS OF VIRGINIA.

COMPOUND CHEMICAL MANURES.—John Kettlewell's (late Kettlewell & Davison's,) Agricultural Depot, Baltimore, Maryland—Renovator, Generator, Biphosphates, Mixture of Potash and Plaster, Pure Ground Plaster, with every description of Chemical residium for the improvement of Crop and Land.

The undersigned, after five years' experience, and a very considerable outlay of capital, has finally triumphed over every obstacle of doubt and prejudice, and is prepared to demonstrate that, for Crop and Land, he can present to the public the cheapest and best Manure known to the age.

His Compounds contain Ammonia, Potash, Biphosphate Soda, indeed every Chemical element, in a powerfully concentrated form, which the soil requires. Any one who doubts this can have his Salts analyzed at the expense of the undersigned, and if they fail in the test, he will return the money, if purchased.

In Wheat, he is willing to admit, that so powerful a stimulant as Guano, will, in many soils, produce a larger first crop, but very far less in a third crop, than his Salts. In Corn and Grass, he challenges a fair trial, upon any soil with Guano or any other Manure—and for any forfeit that would make the experiment interesting. For Corn and Grass, he avers that there is no Manure equal to his from a first to a fourth crop; and he is able to establish it by experimental proof.

His "BIPHOSPHATES" are pure, dissolved with the strongest Sulphuric Acid, and the Bones fresh. In England, no manure is in higher favor, or more sought after for Crop and Land.

His "RENOVATOR" is a Compound of every Chemical which science and experience have shown to be necessary to renovate worn-out land.

His "GENERATOR" is a compound made expressly for Tobacco, and is worthy the most careful investigation of the Planter.

His "PLASTER AND POTASH" is also manufactured for the growth of the Tobacco Plant, and when the almost absolute necessity of Potash is known, for the growth of prime leaf Tobacco, the value of this article may be readily estimated.

His "GROUND PLASTER" is so well known and so eagerly sought from the most distant sections of the Union, that he deems it only necessary to say, that below the standard he has adopted, the undersigned will never permit it to go. There is no article which the Farmer buys that he is more imposed upon, than in this one, of universal use.

In the January number of the American Farmer, the following reply is made by the editor of that valuable paper, in reply to the enquiries of a correspondent:

"Were we to plant Corn in land so poor, that when unaided by manure, would only

produce five bushels of Wheat, we certainly would not rely upon less than four hundred pounds of Guano, producing a good crop."

Now, not relying upon less than four hundred pounds would certainly imply that an additional hundred pounds would do no harm.

Those four hundred pounds of Guano, with transportation, would cost the Farmer not less than ten dollars per acre, which, with the expenses of cultivation, would require "a very good crop" to remunerate, provided no durable benefit was rendered to the soil. Now, what permanent benefit does Guano render to the land? What is its value, except the first crop? Does it operate like a similar powerful stimulant upon the human mind? with prodigious, almost delirious excitement? to be followed by a commensurate depression and exhaustion? Is Guano a stimulant or a manure?

These questions the experience of the Farmer can best answer. But at the present prices of grain they are of vital importance; although in agricultural journals but little discussed. In Pennsylvania, the most lasting manure is called the best—further South, the first yield is the standard. Now, when these Salts are intended for Corn, the undersigned never recommends more than one barrel to the acre, (three dollars,) if applied in the hill—or two barrels for the poorest worn-out land. If the Corn crop is to be followed with a Wheat crop, one barrel in the hill, and one broadcast is recommended, slightly harrowed in—in this way, the Salts are more efficacious than when applied with the Wheat at seeding time. For lasting benefit to Land, these Salts are only subordinate to fresh lime. As a top-dressing they are certain and valuable.

The price of the Biphosphates are four dollars per barrel; the Renovator three dollars per barrel, or twenty-one dollars per ton.

The price of the Tobacco Generator is four dollars per barrel; the Mixture of Potash and Ground Plaster two dollars and fifty cents per barrel; valuable for any crop, but indispensable for prime tobacco leaf. There is one dollar and fifty cents' worth of Potash in every barrel.

His Plaster is sold exclusively by Messrs. Deane & Brown of Richmond, and Messrs. Watkins & Morton of Petersburg.

Freight from Baltimore to Richmond and Petersburg, seventy-five to eighty-seven and a half cents per ton—transportation not being more expensive, counting teams and laborers, if as much so, as hauling out barn-yard manure. No man need make an extravagant experiment; therefore, no great risk is necessary to make a trial. The Agriculturist can order from the undersigned, to be shipped to Richmond or Petersburg, and to the care of each particular Agent, upon whom the undersigned can draw free of expense.

All sums under fifty dollars, cash; over fifty dollars, four months; over one hundred dollars, six months, for acceptances.

Instead of publishing certificates, which is more expensive and less satisfactory, the undersigned begs leave to refer to the following names. He has taken this liberty without consultation or permission of the parties named, but from their intelligence, success and enterprise as Agriculturists, and their character as gentlemen of the highest respectability and honor, he has no doubt but what they would cheerfully impart their experience and information, many of them having largely used these Salts. The postal direction of each party is affixed. It may be proper to observe that the Salts do not produce as heavy a stalk *in Corn*, as Guano. For its yield the farmer must look to the grain of the Corn.

REFERENCES.

Professor Higgins, State Chemist of Maryland, Baltimore, for its Chemical constituents; Rev. J. S. Armistead, Stony Point post office, Cumberland county, Va; Joseph W. Twyman, Esq. Earlysville, Albemarle county, Va.; John M. Dow, Esq. Washington City, D. C.; Dr. Wm. Mosher, Catonsville, Baltimore county, Md.; Dr. William Kirkwood, Prince Georges county, Md.; Wm. H Herbert, Esq. Beltsville, Prince Georges county, Md.; Seth W. Warfield, Esq. Sheriff Howard District, Md.; Dr. Wm. J. Saddler, Saddlersville, Queen Anne county, Md.; W. W. W. Bowie, Esq. Prince Georges county, Md.; George E. Yeatman, Warrenton, Fauquier county, Va; General Henry S. Stiles, Cecil county, Md.; H. E. Bateman, Esq. Easton, Talbot county, Md.; Arthur M'Court, Baltimore; Dr. Robert Dorsey, of Edward, Franklin, Baltimore county, Md.; John L Stavesberry, Treasurer of Baltimore county, Baltimore; Peter Gowan, Esq. Laurel, Howard county, Md.; Col. Horace Capron, Laurel, Md.; Carrville S. Stansbury, Esq. Baltimore county, Md., with hundreds of other names, but the above is amply sufficient for all practicable purposes. The Messrs. Barbours of Orange county, Va. have also used the Salts, with what effect the undersigned has never heard.

Pamphlets will be furnished to all who feel interest enough to investigate; and who are willing to believe that there may be progress in Agriculture, equal to other branches and enterprises of life.

JOHN KETTLEWELL.

Office at the Wholesale Drug Store of Ober & M'Conkey, corner of Lombard and Hanover streets.

Factory, Federal Hill, Baltimore, where, for personal investigation, I invite all persons that take an interest in Agricultural pursuits, who visit Baltimore, and to whom I will cheerfully explain my whole process. There is no secret in it.

Orders addressed to DEANE & BROWN, Richmond, Va. will be promptly attended to for John Kettlewell. mar 3t

ANALYSIS OF SOILS, &c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va.

FRUIT AND ORNAMENTAL TREES AND SHRUBS.

THE Subscriber offers for sale a select assortment of Fruit and Ornamental Trees and Shrubs, a number of new Evergreens, and a good collection of Greenhouse Plants, especially of Camellias, Roses, Geraniums; also, Dahlia Roots, Pœonias, with Bulbous Roots, Garden and Flower Seeds, &c.

All orders thankfully received and promptly attended to. Prices moderate.

The subscriber is commencing a Nursery for the growth of Fruit and Ornamental Trees and Shrubs, in which the greatest care will be taken to grow only those fruits that are adapted to the climate; and all will be worked on seedling stocks. The subscriber has secured the services of an experienced Nurseryman, and thinks he will be able to supply those who may favor him with orders with good Plants at reasonable prices.

Catalogues will be published soon and can be had on application.

ja 3t JOSEPH RENNIE.

COMMISSION HOUSE IN RICHMOND

WITH the view of giving our friends and all others who may favor us with their patronage, the advantages of both markets, we have established in the City of Richmond a house for transacting a General Commission Business, to be conducted by TAZEWELL S. MORTON, under the style of TAZEWELL S. MORTON & Co.

The business of WATKINS & MORTON, will be conducted in Petersburg by SAMUEL V. WATKINS, assisted by JOHN A. MORTON, as heretofore.

It is our purpose to adhere strictly to the Commission Business; giving our undivided attention to the sale of the staple products of the country, viz: Tobacco, Wheat, Corn, Flour, Cotton, &c.

We return our thanks for the liberal patronage that has been bestowed on our concern in Petersburg, and to the dealers in produce and merchandise in that city we feel under many obligations for the generous liberality and punctuality we have at all times met with in our transactions with them.

TAZEWELL S. MORTON & CO.
Richmond, Va.
WATKINS & MORTON,
ja 3t *Petersburg, Va.*

NEW STYLE MEDALLION DAGUERREOTYPES IN COLORS.

This splendid improvement must be seen to be appreciated. Our friends are invited to call at the original VIRGINIA SKY-LIGHT DAGUERREAN GALLERY, where may be found all the latest improvements, consisting of the

CELEROTYPE,
by which infant children may be taken in one second;

TALBOTYPE,
or Daguerreotype on Paper, and

HYALOTYPE,
or Daguerreotypes on Glass, which, with every other improvement, may now be obtained at the Gallery, No. 139 Main street, above Governor.

N. B.—Their NORTHERN COMBINATION SKY LIGHT is now open in full operation—it is the largest in the State.

WM. A. PRATT & CO. Proprietors.

MEDALLION DAGUEREOTYPES IN COLORS.—We have inspected the above style of Daguereotypes, lately and so successfully introduced here by Messrs. PRATT & Co., 132 Main street. By this process, a relief almost magical, and a variety highly pleasing, is obtained. In some cases, the picture so closely resembles an enamelled miniature, in its ivory tone, as to deceive even an artiste; in others from the midst of a dark back ground, appears the "human face divine," in all the vividness of life; then, by still another process, the picture appears entirely upon a brilliant white ground, surrounded by wreaths of flowers. But, we feel our inability to do full justice to these beautiful medallion Daguereotypes, and must, therefore, request the curious in such matters, to call and judge for themselves. Messrs. Pratt & Co. claim to be the first to introduce the sky-light system into the State, and appear to be constantly inventing something for the improvement of the art. Repair to their gallery and "secure the shadow ere the substance fades."—*Richmond Times.*

BOOKS, PIANOS, MUSIC, &c.

NASH & WOODHOUSE, Wholesale and Retail Dealers in BOOKS, PIANO FORTES, STATIONERY, MUSIC, &c. 139, Main St. Richmond, Virginia.

Constantly on hand, a full supply of standard AGRICULTURAL WORKS.

oct—tf

OSAGE ORANGE PLANTS FOR HEDGES.—A few thousand raised by myself, for sale.

WM. H. RICHARDSON.
Richmond, Jan. 1, 1852—3t

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PIEDMONT FEMALE SEMINARY.

THE subscriber will open a Female School at his house, near Gordonsville, on the 15th of January. He has already engaged a teacher of unquestionable qualifications. His terms per session of 10 months will be $120, for board and tuition in all the English branches, and in the French language. An additional fee of $30 will be charged for music.

de—3t* JAS. W. GOSS.

OSAGE ORANGE SEED,

SAVED with great care, and received direct from the region where it is grown, of reliable quality. For sale by

L. S. HOYT,

dé—4t 55, Water st. New York.

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

STOCK Cattle of all the different breeds, Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged. Apply to

AARON CLEMENT, *Philadelphia.*

Refer to Gen. W. H. Richardson, Richmond, Virginia.

N. B.—All letters, post-paid, will be promptly attended to. ap—tf

GREAT REDUCTION IN PRICES OF HATS AND BOOTS.

J. H. ANTHONY'S FASHIONABLE HAT STORE, *Columbian Hotel Corner.*

THE cheapest place in the city of Richmond to buy HATS and BOOTS is at the above store, where every article sold may be relied on as represented. By this means he has gained a good run of custom, and his customers feel satisfied. Below is a list of his prices, which will be strictly adhered to:

Best quality moleskin, - -	$3 50
Second quality " - -	3 00
Best quality silk, - - -	2 50
Second " " - - -	2 00

Fine Calfskin Sewed Boots only three dollars and fifty cents.

Also, CAPS, SHOES and UMBRELLAS.

J. H. ANTHONY has made an arrangement with one of the best makers in the city of Philadelphia, to supply him with a handsome and substantial Calfskin Sewed BOOT, which he will sell at the unprecedented low price of three dollars and fifty cents. The attention of gentlemen is respectfully solicited, as they are the best and cheapest Boots that have ever been offered for sale in this city. He intends to keep but the one kind, and sell them at one price. se—1y

THE RICHMOND AND PETERSBURG RAIL ROAD COMPANY respectfully inform farmers living on the Roanoke River and on the line of the Raleigh and Gaston Rail Road, that they are transporting tobacco and other produce between Richmond and Petersburg with promptness and despatch, running daily trains of eight [illegible]el covered cars, securing tobacco and g[illegible] from damage. Tobacco consigned to the care of J. Lynch, Rail Road Agent, Petersburg, will be forwarded, free of commissions, to Richmond. Goods purchased in Richmond and consigned to the Rail Road Agent at Gaston will be forwarded up the river without charge for forwarding.

THOS. DODAMEAD,
Sup't R. & P. R. R.

June 24, 1851—tf

VIRGINIA AXES.

THE undersigned, in connexion with their Rolling Mill, have erected an extensive Manufactory of Axes, Hatchets, and Tools generally, which they warrant equal to any manufactured, and offer at Northern prices. They solicit the patronage of the agricultural community.

R. ARCHER,
A. D. TOWNES,
R. S. ARCHER,
C. DIMMOCK. } R. ARCHER & CO.

oct—1y

BOOK AND JOB PRINTING executed at this Office with neatness and dispatch. Office South Twelfth Street.

THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, Editor. P. D. BERNARD, Proprietor.

Vol. XII. RICHMOND, APRIL, 1852. No. 4.

STATE AGRICULTURAL CONVENTION.

Charlottesville, March 1st, 1852.

F. G. Ruffin, Esq.

Dear Sir,—Many of your friends in attendance upon the Agricultural Convention lately held in the city of Richmond, listened with great pleasure to the very able address read by you upon that occasion. They believe it to contain matter of grave import to the farmers of Virginia, and are of opinion that it should have that publicity to which its intrinsic ability and the general interest of its subject entitle it.

If our State possesses, as we believe she does, the richest soil, most genial climate and cheapest labor on earth, and is yet found to compare unfavorably in point of agricultural production with some of her sister States, less favored by nature, we, the farmers of Virginia, should know the truth, investigate the cause, and apply the remedy. Proud as we are of her historic glory, we should not be blind to the condition of her agriculture. We may rest content with the *laurels* our ancestors have won; but we cannot feed our children upon the *bread* they made. We, therefore, request a copy of your address for publication.

R. W. N. Noland,
W. H. Southall,
B. F. Randolph,
W. N. Ragland,
F. E. G. Carr,
Jesse L. Maury,
Step. F. Sampson,
Jos. W. Campbell,
J. Wood, Jr.
F. K. Nelson,
C. G. Meriwether,
J. S. Minor,
Geo. W. Craven,
Jas. F. Fry,
John R. Woods,
J. W. Goss,
T. W. Meriwether,
Franklin Minor,
Chas. Minor.

Messrs. Noland, Southall, and others:

Gentlemen,—Your note of March 1st is before me, requesting for publication a copy of the brief address I had the honor to report to the Convention of Farmers, lately assembled in Richmond. Grateful for the terms in which your request is couched, I comply with it at once; and, wanting a better place, beg leave to state here, by way of preface, the objects I had in view when I prepared it.

As to a patient who holds his life in his own hands, a physician will at once declare his disease and its remedy, so I thought to present to the farmers of Virginia their actual condition and the remedy for it. In doing this it was necessary to compare them with the farmers of other States, and I selected New York and Massachusetts for that purpose. Necessarily omitting a full comparison, and thereby, as I conceive, doing no harm to Virginia, I confined myself to a very brief and imperfect statistical exposition of her agriculture; and it was not my fault if documents official, and therefore presumably authentic, placed Virginia behind her contemporaries. But I would have been much to blame had I not endeavored, as I did, to point out how that reproach might be wiped away.

The address, as you know, was adopted by a large majority of the Convention; was re-considered and again adopted—was a second time re-considered, and was discussed by Messrs. Morson, Seddon and Willoughby Newton on the one side, and myself and several others on the other side, and laid on the table at the instance of one of my friends, who thought that in view of the application we meant to make to the Legislature, it was best to present unanimity in our proceedings. To this course a majority assented, influenced by the same opinion; and I, though differing with them, very cheerfully submitted to their decision. This left the address at my individual disposal, and I place it at yours.

Of the grounds, untenable in my opinion, taken by the gentlemen who opposed it, it is unnecessary to speak. But I think their sensitiveness will not be appreciated, if it can be understood, by farmers at large. If their apprehension be well founded that fanaticism will seize upon the address as an anti-slavery argument, I can only say what they and I am fully agreed upon, that fanaticism is a fool for whose vagaries I am not responsible. I am a pro-slavery man—I believe it at this time impossible to abolish it, and not desirable, if it were possible. I believe that when the good God established it here he placed such a trust in the South as has never been reposed in any other nation—that it was a signal mark of favor, and that when, in His own wise providence, He shall decree its extinction, as I am sure He will, that it will be done without convulsion and without injury to white or black, and in a manner which cannot be foretold by the wisest leaders of the Liberty Party! This ought to be sufficient on that head, and I cannot consent, especially when backed by your request, to suppress important, wholesome truths, because bad men may make use of them. Reptiles will bask in the sun.

Finally, let me say, that the conception and execution of this address is wholly my own. If its publication produce displeasure, let it all fall on my head.

I am, gentlemen, with high respect,
Your friend and ob't servant,
FRANK: G. RUFFIN.

Shadwell, Albemarle, March, 1852.

ADDRESS TO THE FARMERS OF VIRGINIA.

"The Southern States stand foremost in agricultural labor, though they hold but the third rank in population." At the head of these Southern States, in production, in extent of territory, in climate, in soil, and in population, stands the Commonwealth of Virginia. She is a nation of farmers. Eight-tenths of her industry is expended upon the soil; but less than one-third of her domain is in pasturage, or under the plough. Out of somewhat more than thirty-nine millions of acres, she tills but little over ten millions of acres, or about twenty-six and a quarter per cent. whilst New York has subdued about forty-one per cent. or twelve and a quarter out of her twenty-nine and a half millions of acres: and Massachusetts, with her sterile soil and inhospitable climate, has reclaimed from the forest, the quarry and the marsh, about forty-two and a half per cent. or two and one-eighth out of her little territory of five millions of acres. Yet, according to the census of 1840, only six-tenths of the labor of New York, and four-tenths of that of Massachusetts, or, relatively, one-fifth and two-fifths less than our own, is expended upon agriculture.

The agricultural implements and machinery of Virginia, are worth but sixty-nine cents for every arable acre; in New York they are worth one dollar and eighty cents, and in Massachusetts one dollar and forty-nine cents for every arable acre; but, as in those States, the breadth of mowing and pasture lands is much greater than with us—the difference in value of agricultural implements, to every acre tilled, is still greater against us.

The live stock of Virginia are worth only three dollars and thirty-one cents for every arable acre; but in New York they are worth six dollars and seven cents, and in Massachusetts four dollars and fifty-two cents.

The proportion of hay to the same quantity of land is, for Virginia, eighty-one pounds; for New York, six hundred and seventy-nine pounds; for Massachusetts, six hundred and eighty-four pounds.

Now, "tillage and pasturage are the two breasts of the State." Tillage extracts from the earth; pasturage indirectly, but surely, restores to it. To keep the land up to its original fertility, still more to improve it beyond that point, requires a perfect system of tillage. By that means we are enabled to raise large crops, and thus to expend, as we needs must, in the form of manure, whether in substance or in revenue, a larger proportion of what we draw from the soil. To effect this tillage, and to apply this manure, with the least labor and to the greatest advantage, requires the best implements that can be constructed, each well adapted to its purpose. This rule is undeniable and of universal application. Yet we Virginians do not recognise it in practice. With access to the same markets, and with hundreds of mechanics of our own, who can vie with the best Northern manufacturers, we find that our implements are inferior, that the New York farmer spends upon his nearly three times as much as we do upon ours, and the Massachusetts farmer more than double.

But perfect tillage is not all. Pasturage is not less necessary as the means of supporting that live stock which shall aid us in tillage, feed us, clothe us, supply the

shambles, and make manure. Manure is indispensable to good husbandry. Judging from the history of agriculture in all other countries, we may safely say, that farming can never attain to continued perfection where manure is not put on with an unsparing hand. By far the larger part of this can only be made by stock, which should at the same time be made the source of profit, at least sufficient to pay the cost of their keep, so that, *other things being equal*, it is a safe rule to estimate the condition of a farming district, by the amount of live stock it may possess and the provision made for their sustenance. Applied in this instance, we see that the New York farmer has invested in live stock two dollars and seventy-six cents, and the Massachusetts farmer one dollar and twenty-one cents per acre more than the Virginia farmer. In pasturage we cannot tell the difference. It is well, perhaps, for the honor of the State, that we cannot. But in hay, New York has five hundred and ninety-eight pounds, and Massachusetts six hundred and three pounds more per acre than we have. This, however, does not present the true state of the case. Landlocked by mountain barriers, as yet impassable for the ordinary agricultural staples, or debarred from their production by distance, and prohibitory rates of transportation, most of the wealth and exports of many considerable portions of our State consists of live stock alone. What proportion these parts bear to the whole, we have been unable definitely to ascertain; but it is no doubt so great as to warrant us in assuming a much more considerable disparity than the statistics show in the live stock of the whole Atlantic slope, as compared with New York and Massachusetts. And we shall appreciate still more highly the skill of the Northern farmer, if we reflect that a readier market for every, the most trivial product of his farm, operates a constant temptation to break up his rotation and diminish his stock.

In the above figures, carefully calculated from the data of authentic documents,* we find no cause for self-gratulation, but some food for meditation. They are not without use to those who would improve the future by the past. They show that we have not done our part in the bringing of land into cultivation; that notwithstanding natural advantages, which greatly exceed those of the two States drawn into parallel with Virginia, we are yet behind them both—that with forty and sixty per cent. respectively of their industry devoted to other pursuits into which it has been lured by prospects of greater gain, they have done more than we have done. In one word, they prove the general inferiority of farmers in Virginia. More individual comfort and better food, and more luxury is enjoyed by us here, and more money, we know, is made, than at the North.—There is too, with some of our farmers, a vast deal of energy, and they afford many instances of very remarkable and praiseworthy skill. But notwithstanding these things with lands low in price, and labor, which, if not "intelligent," is still so cheap that, with all our wastefulness, we can raise some of our staples and sell them at a profit, when the same acreable produce would starve the frugal free-soil farmer, we must yet confess that much is due to our climate. On the other hand, the frigid and inhospitable North compels to efforts which are here unnecessary; and the labor which cultivates the earth, from which they wring their scanty earnings, cultivates also the hardier virtues of our nature, which again re-act upon the soil.

Nor upon that alone. Whilst our population has increased for the last ten years, in a ratio of 11.66, that of New York has increased in a ratio of 27.52, and that of Massachusetts at the still heavier and more startling rate of 34.81. With a territorial area thirty per cent. larger than New York, we have but little more than one-third of her Congressional representation; and Massachusetts, only one-eighth our size, comes within two of our number of representatives, we being cut down to thirteen, while she rises to eleven. And thus we, who once swayed the councils of the Union, find our power gone and our influence on the wane, at a time when both are of vital importance to our prosperity, if not to our safety. As other States accumulate the means of material greatness, and glide past us on the road to wealth and empire, we slight the warnings of dull statistics, and drive lazily along the field of ancient customs, or stop the *plough* to speed the *politician*—should we not, in too many cases, say with more propriety, the *demagogue!*

State pride is a good thing, it is one mode in which patriotism is manifested. But it is not always a wise thing. Cer-

* Abstract of the Seventh Census, and the able work of Professor Tucker, on the "Progress of United States in Population and Wealth."

tainly not, when it makes us content on small grounds. And when it smothers up improvement in self-satisfaction, it is a most pernicious thing. We have much to be proud of in Virginia. In intellect and fitness to command, in personal and social qualities, in high tone and noble bearing, in loyalty, in generosity, and magnanimity, and disinterestedness, above all, in moral purity, we once stood, let us hope, still stand, pre-eminent among our sister States. But the possession and practice of these virtues does not comprise our whole duty as men or as citizens. The great decree which has gone forth ordaining that we shall "increase and multiply and replenish the earth," enjoins upon us quite other duties, which cannot be neglected with impunity. So we have found out by experience—for we *have* neglected these duties. And when we contemplate our field of labor, and the work we have done in it, we cannot but observe the sad contrast between capacity and achievement. With a wide spread domain, with a kindly soil, with a climate whose sun radiates fertility, and whose very dews distil abundance, we find our inheritance so wasted that the eye aches to behold the prospect.

We shall not stop to enquire at whose door lies the cause or the blame of this devastation; or to ascertain whether it has not sprung from natural and unavoidable causes. We address ourselves to the remedy. That remedy, farmers of Virginia, depends on you; and it is hard to say whether it imports more to yourselves or society. With a new Constitution, we enter upon a new order of things. By universal suffrage, and by making all the most important offices elective, an additional amount of power has been infused into our political system—an additional amount of energy also. The restless activity of the people will not be stayed; and agriculture, whether for weal or wo, will feel and respond to the impulse. Two courses are before you—either to neglect the new duties which claim performance at your hands, thereby to sink below the depths of party spirit into the foul abyss of partizanship, and see yourselves degraded to a nation of tools and dupes; to surrender the whole direction of public affairs to those who make a trade of politics, and pander to the worst passions of the people whom they corrupt and abuse and betray—either this, or to take that control which rightly belongs to you, the natural rulers of the State and representatives of its conservatism, to foster public spirit and private enterprise, to instruct, enlighten, defend and provide for the people, to give a right direction to the public mind, and to protect it from that bondage which the demagogue would impose, and which is rivetted by an uninformed and selfish and narrow spirit—these are the alternatives—choose ye between the two! You must conquer by action, or submit by inaction! Why not conquer? It is not difficult. Men instinctively worship law and order, because it is necessary to self-preservation. The true strength and excellence of government never did lie, God forbid it ever shall lie, in mere numbers. Moral influences control its operations, as certainly as gravity controls our steps. But unlike gravity, these influences are inert and require to be put in motion. It were invidious to particularize, but we may point in general terms, to States north and west of us, in which, as one or the other of these alternatives predominates, we see steadiness, loyalty and virtue, or the germs of restlessness, anarchy, grossness and debasement. Such tendencies now await us; one or the other we must speedily assume. Our population is beginning to increase. The far West has receded too far for further emigration. Our people will stay at home. They cannot be driven abroad; population will press upon subsistence, and we must make provision for it, or it will make provision for itself and become a curse, instead of a blessing.

But how shall this provision be made? By agricultural improvement, in the first place; by so developing the resources of the State as to keep all our citizens at work. By this means, we have every confidence that, in a few years, we shall regain the ground we have lost; and go as far ahead of other States as they are now ahead of us. This is no idle boast. In spite of the comparative bad management which we have proved to prevail in Virginia, it appears from the census of 1840, that the total value of agricultural produce, including, of course, what was consumed on the farm and otherwise applied to agricultural uses, was, in round numbers, in Virginia, New York and Massachusetts, fifty-eight, one hundred and eight, and nine and a half millions of dollars respectively, being to each person employed in agriculture in these States, $186.60, $240 and $108, showing an excess in favor of Virginia over Massachusetts of forty-two and a half per cent. and of New York over Virginia

of twenty-two and a half per cent. Though we should not despond too deeply, nor exult too highly on account of this deficiency or excess, since an inspection of the tables of production will show that the difference is mainly due, on the one hand, to the grade of staples as dependant on climate and soil, and on the other, to the greater value of their animal productions.

Thus we find that in 1840 Massachusetts produced upwards of five millions of bushels of potatoes, or sixty bushels to each integer of her agricultural industry, whilst we made less than three millions of bushels, or 8.30. But of wheat and corn we made upwards of thirty-five millions of bushels, and Massachusetts a fraction under two millions. At that time, too, there was a bounty on the production of wheat, which stimulated its growth beyond the steady capacity of the State, as proved by the returns of the last census, which, putting her wheat crop at twenty-nine thousand seven hundred and eighty-four bushels, shows a deficit of one hundred and twenty-eight thousand one hundred and thirty-nine bushels, as compared with the product of 1840, whereas in Virginia there is a general increase of fifty per cent. and much larger, we know, as to tide-water and all that part of the State tributary to Richmond. On the other hand we find, when compared with New York, that we made of wheat $31.50, of corn $54—$85.50 per hand, and she of wheat $27, of corn $15—$42, or more than one hundred per cent. deficit. But in value of live stock and dairy products and hay, we made $102, $4, $8.30 respectively—$114.30; and she $121, $23, $61.70—$205.70; or nearly one hundred per cent. excess. The excess of value of her oat and orchard crop, about offsets the value of our tobacco crop, and leaves the difference in favor of New York mainly dependant on wool. As there is an evident mistake in the number of pounds of wool in Virginia, in the census report of 1840, we shall not state the figures, but refer in lieu of it to the more satisfactory report of the present census, which shows an excess in New York of thirty-eight per cent. in sheep, but only twenty-eight and a half per cent. in wool, or in that stock which the New York farmer feeds and we starve, an advantage in our favor, referable to climate alone, of nine and a half per cent. But our capacity for grass and hay and for live stock and their products, is fully equal to theirs, and what is true of sheep, is equally true of every other sort of farm stock. With this cheering exhibit in our favor, we think it only necessary for the farmers to co-operate heartily, and all that our condition requires can be soon attained. If we can agree to meet each other, and to discuss our wants, state our experience and practices, compare our opinions and concert plans for action, the task is more than half accomplished. For reflection will have begun to rouse us to reform.

But it is not likely that a meeting for such purposes alone, will possess sufficient interest to call farmers together often, and keep them convened long enough to do much good. We would, therefore, propose, as an additional attraction, the formation of an Agricultural Society. Let this be properly organized; let it establish shows and fairs for the exhibition and sale of live stock and farming implements; let liberal premiums be judiciously bestowed on these and kindred things, on farms and on new and useful inventions; let addresses be delivered by our most intelligent practical farmers, and never, when it can possibly be avoided, by any other class of men; let this whole thing be a festival, and if an interest is not awakened in behalf of agriculture, it will be because of deplorable mismanagement, or because the farmers of Virginia are not actuated by the motives, which, under similar circumstances, have never failed to influence the same class of men elsewhere.

There may be some who will object to Agricultural Societies as useless, if not pernicious humbugs. We have not time now to argue the question at length with such persons, or to require of them, as we rightfully may, to offer a better substitute for the do-nothing policy which we propose to supplant. Our faith is strong in the good effects of such Societies, which are not only useful, as exhibitions of the skill of the farmer, and of his best friend, the mechanic, and as affording in farm management, in stock breeding, and in implements, models for the diligent enquirer, and encouragement to competitors for excellence, but, also, as a means of eliciting, incidentally, much valuable information from those who compose such Societies. It has been well said, recently, that "the principles of exhibitions has been recognised by all nations and in all climes. Man naturally seeks to enlist the sympathy of his fellow man towards the object which he admires. The world's history tells us, that every people, according to the spirit of its time, and national feeling, has held exhibitions

of that which it held in highest esteem." At present, they are the "order of the day." And, with the recent triumph of Virginia's skill at the World's Fair, when M'Cormick's and Hussey's reapers bore off the palm from all sorts of competition, and where America contributed substance, whilst Europe offered gewgaws, we should be the very last to reprobate or abjure them.

But who ever heard of Northern people spending money where it did not pay, and continuing to do it year by year? If it is true that we can safely follow them in a matter of dollars and cents, we may take a lesson from the late report of the Treasurer of the New York State Agricultural Society. According to that document, we find that the total receipts of the Society for the last year, including the State contribution of $880 43, was $17,218 85, of which sum $11,954 25 was received for entrance tickets and contributions at the State Fair, all paid by individuals who love their money at least as well as we do. Of this sum $5,155 73 was distributed in premiums, and only $1,000 13 expended in salaries. When it is considered that this striking exhibit is made, after an experience of twenty years, we think it very safe to conclude that it evidences utility, good management, and a public spirit beyond all praise. Shall we not emulate it? The details of the management of other Societies, which it were tedious to recount, exhibits similar, if not equal, results.

The last question we shall discuss, is that of the finances necessary to start and sustain such a Society. We must have money. It has been decided to introduce a bill into the General Assembly asking for an appropriation of State money, conditioned on an equal, individual contribution, and the enactment of such provisions as shall secure to the State Society the certain collection and full fruition of their funds. To those who object to the tax thus proposed to be laid, we beg leave simply to say, that there are 76,704 farms in Virginia, and that, should the whole tax amount to $10,000, a sum we cannot hope to realize, it would make just thirteen cents for each farm; if they quarrel with that amount, we reduce it forty per cent. for the independent appropriation of $4,000 already made, for the employment of an Agricultural Commissioner and Chemist, which leaves 7 8–10 cents. If this does not quiet their fears, we can tell them that about one-half of it will be contributed by others than farmers.

To those who are expected to raise the individual sum, we appeal by all the considerations we have adduced and by all the other motives which should actuate them. We ask the man of moderate means to make an outlay which will reimburse him one hundred fold. We ask the rich man to become at once a life member, and to make his children such, that so, he may evince his liberality, and may not suffer the stinging reproach that he is surpassed in his virtue by his poorer neighbor. We appeal to all to keep up the character of their country for generosity.

But we are well aware that, with the mass of men, such addresses as these are not efficacious. Individual solicitation is necessary to rouse the majority of mankind, who rarely act in large bodies from concurrent impulse. Is it not then the duty of the active and public spirited few, who feel the importance of this thing, and acknowledge it to themselves, to take it in hand and carry it through? Should not all such work from a sense of pride if not from a sense of duty, and from very shame, if not from pride? We challenge them to meet us in the field of action, conscious that if they beat us, they can but

——"learn us how to lose a winning match."

Let them come prepared to make such efforts in this cause as Virginia *has* made in politics, and equal success and ultimate supremacy will crown the work. Let them accommodate themselves to the spirit of the age; let their State's rights mean the right to make Virginia the greatest of States. Is not such a consummation worth some little effort?

In conclusion, we beg leave to say that, in speaking so plainly, but by no means despondingly, we have but done our duty. Virginians in heart and soul, proud of our nativity and of our people, we yet feel bound to tell the truth, if it *be* not pleasant. We are too much the *friends* of the people to become their courtiers.

We make no apology for publishing the foregoing address, because we believe *it contains the truth.* We ask for it, not as our own production, but as an exposition of Virginia agriculture, a candid and attentive perusal.—Ed. So. Planter.

For the Southern Planter.

DANIEL LEE, M. D.

Mr. Editor,—In looking over a late number of the Southern Cultivator, published at Augusta, Georgia, and seeing the name of Dan'l Lee, M. D. Editor! I was forcibly reminded of the graphic picture drawn by Washington Irving, of the New England farmer: "The first thought," says he, "of a Yankee farmer on coming to years of manhood, is to settle himself in the world; which means nothing more than to begin his rambles. It is not the nature of this most indefatigable of speculators to rest content with any state of sublunary enjoyment. Being at one time settled, and to use his own words, 'to rights,' one might imagine that he would continue to enjoy the comforts of his situation; to read, to write for the papers, to *lecture* on some favorite topic; to neglect his own affairs, and attend to those of the nation, like a useful and patriotic citizen; but now it is that his wayward disposition begins to appear. He soon grows tired of a spot where there is no longer any room for improvement. He sells out—and starts to again wander."

I think I may safely congratulate the Doctor, for, at the same time that he has deserted his home, he is evidently about to abandon his principles. There can be no other excuse for the random and uncertain reply to the article of "A Virginia Farmer" on the "Improvement of the Naturally Thin and Partially Exhausted Lands of his own State."

Nothing but the prominent place into which Dr. Lee seems determined to thrust himself, renders it necessary for me to say a word in answer to his reply to my strictures on his first article. Indeed he makes no attempt to refute a single important point of my argument, but contents himself with misrepresenting me, misquoting me, and actually inventing for me; by such flimsy pretexts hoping to conceal his own weakness; evidently willing that the cause of agriculture should suffer, rather than come forward, like a man, and acknowledge that he had written "an unconsidered trifle."

If truth be his object, why does he tell his readers that I had written three or four pages of *sectional abuse* in the Southern Planter?—"My offence hath this extent, no more"—that in exposing one great humbug I made allusion to others of less moment, though all emanating, as it happened, from the same quarter. I was not aware that New York considered her reputation assailed, or would cry out "Touch not mine anointed, and do my prophet no harm," when "A Virginia Farmer" spoke slightingly of wooden nutmegs, Berkshire pigs, or a deceptious system of farming. It is impossible for us to entertain a very high respect for any of these things, though the one may come recommended as *the gentleman's hog*, and the other may be promulgated *by a gentleman*, who has written something for *the Patent Office*.

If truth be his object, why does Dr. Lee tell his readers, that "A Virginia Farmer" commits an inexcusable blunder in assuming that the principles of agriculture are not the same in slave-holding States, as in those States which have no slaves?

"A Virginia Farmer" perpetrated no such folly. On the contrary, he asserted, with emphasis, that THE PRINCIPLES OF AGRICULTURE ARE THE SAME EVERYWHERE, and that all good husbandry depends upon the completeness of their execution.

If truth be Dr. Lee's object, why does he tell his readers, that "A Virginia Farmer ignores all husbandry, and recommends no other crops than tobacco and corn?"

"A Virginia Farmer" said not one word in disparagement of husbandry. He made no exclusive recommendation of corn and tobacco. He advised that a new-ground or a foul old field should be cleansed with a crop of corn or tobacco, in preference to seeding it down in wheat or grass, and using only a harrow to prepare the land. Farther than this he went not; but attempted to show, that the true principles of agriculture being adopted would lead to an increase of grain, of grass, of stock and of manure.

If truth be his object, why does Dr. Lee tell his readers, that "A Virginia Farmer is entirely ignorant of the system of husbandry which the good and pious Abel pursued?"

If by this the gentleman means the grass and stock husbandry, it is sufficient for me to say that I did not offer to lay down any particular system either of husbandry or of tillage, and, therefore, could neither have displayed my knowledge nor exposed my ignorance.—Does the gentleman expect to advance the true interest of agriculture by such unworthy means? Or does he not rather hope to "darken counsel," and in the mist of words, to make his retreat from a position he found untenable, if not with credit, at least without censure?

There are but two other points in Dr. Lee's reply which require notice from me. As they are matters of importance, I ask for them the serious consideration of your readers.

Dr. Lee says that the plan of manuring an impoverished field, or a lot of land naturally poor and thin, by cultivating it in tobacco, is "fatally defective." 1st, because "the crop of tobacco removes from the soil ten times as much potash as was contained in the manure;" and "secondly, because the tillage necessary to its production, exposes the alkalies to be washed by rains into the swamps and branches." This, in the end, "must consume all the most costly and important constituents of plants within two feet of the surface of the ground."

This is the broad and unqualified assertion of Dr. Lee, and from it there is no appeal, because the Doctor informs us that *he* "has written an article for the Patent Office on the

'Study of Soils.'" If this be true of tobacco, it is true of every other crop in a greater or less degree, and the consequence is inevitable, that all tillage of naturally thin or partially exhausted lands, must cease, and three-fourths of the arable land of our State must be left to "the skyey influences;" except, that they may occasionally be sown in wheat or grass, with the condition that the surface of the ground is only to be scarified with the harrow, lest the rain should wash out the alkalies.

Now, sir, "there are many events in the womb of time which must be delivered," but it is a matter of special wonder to me, that a gentleman who aspires to be an instructor in agriculture, should pass by without notice the accumulated and successful experience of the world, and gravely insist on our abandoning tillage, and drainage, and manuring—all the processes of industry, and embrace with eagerness a system which we are convinced must render our lands sterile by idleness.

It has been ascertained that three-fourths of the cleared land in Virginia are in the state which Dr. Lee describes as "naturally thin, or partially exhausted." These lands, he says, cannot be improved by any other system than the one which the good and pious Abel pursued; in other words, we must set our negroes adrift, and turn shepherds! "We have just as much reason," he says, "to believe we are growing rich, if we put a dime in our pocket, and spend a quarter, as we have to believe that we are improving our lands when we manure them, and cultivate any of the staple crops of the country; because such crop takes off a larger amount of one or more of the important constituents of the soil than was given to it in the manure.

Now, sir, this is the result of *writing* on "the study of soils." To see things as they are, is in agriculture, as in every thing else, the first rule of good sense. We have some farmers in Virginia who have not only *written about*, but have *studied* soils; and not only have they done this, but they have cultivated and improved "naturally thin, or partially exhausted soils." Is Dr. Lee ignorant that in Eastern Virginia, wherever the lands have been limed and manured, (a practice which is rapidly extending,) the crops of corn, and wheat, and grass, and manure, and stock have more than quadrupled! According to the Doctor's theory they should have diminished each year.

If we look to Middle Virginia, embracing the tobacco region, do we find anything in the cultivation of this crop necessarily exhausting? or incompatible with the highest state of improvement to the soil? Do we not find the farm in the highest state of fertility, as often in the hands of a large tobacco planter, as in those of a farmer who for years has abandoned the crop? But let us examine this matter a little further.

Wheat on ordinary land we know will not grow after wheat. Now no man who is qualified to pronounce an opinion will deny that wheat will grow well after tobacco; and that clover, or any of the artificial grasses, will take and grow well after the wheat. Indeed, there is no preparation which you can give land, that puts it in so good a condition as the tobacco crop for producing either wheat, grass, corn, flax, turnips, cabbage, or any other plant that is suitable to the climate of Virginia. This is not to be received as the mere assertion of "A Virginia Farmer." It is the observation and experience of every man in the State of Virginia who has ever cultivated an acre of tobacco and followed it by any other crop. Yet Dr. Lee would convince us that our lands are becoming rapidly exhausted, because the little mineral matter which the tobacco may have left, must have been washed into the nearest swamp or branch.

It has been the practice in many parts of Virginia for planters to set apart particular lots for tobacco, and to cultivate them in the following order: tobacco, wheat and clover; and such a course has not seemed to exhaust the soil, or diminish the crop. The late Wm. Old of Powhatan, who was noted for the high degree of improvement to which he had brought his estate, (its condition, when he came into possession of it, being such that its owner had to abandon it, because he could not make a living on it,) had but two lots for tobacco, which, after once manuring, he cultivated for fifteen or twenty years alternately in tobacco and oats—returning the oats to the land. No planter in the State made larger crops, in proportion to the land cultivated, or obtained higher prices in market, and at the same time the other products of the estate were so increased, and the general improvement so great, that but one other farm in his district could be compared with it. The culture of tobacco is not necessarily incompatible with the improvement of the soil. It is at least *a very slow poison.*

Mr. William Garth of Albemarle, who is now publishing in your paper a series of articles on the Management of the Tobacco Crop, which will be read with interest, as coming from one of the largest and most successful cultivators of this crop in Virginia, is also one of the largest grass, and grain and stock raisers. He has even supplied the New York market with some good beef.

Mr. Garth has been for years in the habit of applying his large stores of manure to his "partially exhausted lands," and after an ample return in tobacco, he has been accustomed to reap crops of wheat off of the same land, quadruple in amount to what it would have produced without the previous preparation for and cultivation of the tobacco.

Such lands he rightly considers as permanently improved, and that under a system of judicious management they will continue to yield an increased amount of grain, and grass, and stock, and manure; but Dr. Lee says that the crop of tobacco alone has exhausted the

land of ten times as much potash as the manure contained; and that most of the other important constituents of the soil have been exposed by the tillage, and have been washed out into the swamps and branches!

Much of the organic matter or mould too, he says, must be sought for in the springs in the form of canic or apocrenic acids. But,

"Facts are stubborn things,
And canna' be disputed;"

or overturned by theory.

I have instanced the practice of Mr. Old and Mr. Garth, because at the same time that they were known through the State to be large and successful planters, it was known that they had brought their lands to a comparatively high state of fertility.

I could fill this sheet with *facts* in opposition to Dr. Lee's *theory*, but the experience and observation of every farmer must convince him that this new light is one that "dazzles to lead astray."

We must not follow it. A bountiful Providence never ordained that the industrious and intelligent manuring of the soil should result in certain and speedy barrenness.

"A Virginia Farmer" can never be persuaded, that the Father of all the families of the earth means to impose the horrors of starvation upon his children, in spite of their best directed efforts to improve the patrimony with which he has endowed them.

"There are more things in heaven and earth" than Dr. Lee has dreampt of. Admit that each crop in its turn takes from the soil more of its peculiar food than is returned to it in the shape of manure. As long as our lands are capable of producing crops there is no cause to despond, much less to despair.—There is a supply in reserve, ample in most cases for our wants, and the diligent and hopeful farmer will never lack. If he will apply *all the available resources* of his farm NATURE will supply every deficiency.

Every stone, and pebble and bit of gravel contains a portion of one or more of the mineral constituents of soils. The clay is Nature's store-house for these substances. Already abounding in them, it is a wise provision that it yields its wealth with reluctance to the shallow and slovenly cultivator, while it bestows it, with no niggard hand, on the farmer who thoroughly breaks, and pulverizes, and drains, and manures his land. From their strong affinity for the clay, they become incorporated with it as soon as they are dissolved by the rains, and I have reason to believe that a very small part of the inorganic manures is lost in the swamps and branches.

Lime, as a general rule, has been found universally applicable as a dressing for the lands, and this in much larger quantities than merely as a food for plants. I shall not stop to inquire into its mode of action. It is sufficient for my purpose to say that in the State of Virginia it has been proved, when used along with all the other methods of good husbandry, to be the substance which all our naturally thin lands require to advance them to the state of remunerative production. The different marls of Eastern Virginia and the extensive veins of limestone in other parts of the State, offer an abundant supply of this material to the farmer. I know very well that there are soils which require a specific manure before they can be improved, but they are exceptions to the general experience of the world, which shows that liming, in addition to *all* the other appliances which the good husbandman uses, is sufficient to improve and preserve the fertility of his land.

There is but one other point in Dr. Lee's reply which requires notice; and by the way, it is the only attempt which he makes to defend the principles and practice which he had no hesitation in recommending as the best means to improve "the naturally thin or partially exhausted lands of Virginia." He is still in favor of laying lands down in grass, by the use of the harrow alone.

"Still harping on my daughter," and being of course, unable to bring either the authority of science or the weight of experience to his aid, he contents himself with drawing a fancy sketch of a dairy farm, consisting of a hundred acres of a foul and worn-out old field in Virginia, with the filth burned off and the grass seed and manure harrowed in on the surface, without any other preparation.

Dr. Lee says that a northern dairy-man, (with the lights of "The Genesee Farmer" to guide him,) would stock this field the first year with fifty cows. Each cow would yield two hundred pounds of choice butter a year, which would sell for twenty-five cents a pound in any of our cities, and the buttermilk and other things would be worth five hundred dollars more. He would go on adding to his stock five cows annually, and in ten years he says *one hundred* acres of *deserted old field* would support *one hundred* cows, would be worth *ten thousand dollars*, and would yield an income of *five thousand dollars* in butter alone, (pork not included!)

The Doctor adds, that "so sure as grass grows, this will be the result." I have my doubts.

I will repeat again what I have already said more than once, and what I am confirmed in by the opinion and practice of all good farmers; that when land is to be laid down in grass it should not only be clean and well pulverized, but all the roots and weeds should be extirpated, and the condition of the soil made as perfect as previous thorough tillage and manuring can make it.

If the grass will not grow with the preparation which the Doctor advises, of course his plan of making a fortune must fail. I think, nay, I am certain, that it will fail. But the most surprising part of his scheme is, that in his twenty thousand pounds of butter, the

Doctor does not intend to sell any thing but *air*. This, he says, he can demonstrate. We will excuse him. He no doubt uses the patent *atmospheric* churn. In Virginia we stick to the old dash churn, with cuffee at the handle; and as in most other things in which he is employed, the butter turns out something more substantial.

The Doctor thinks that he has made a grand discovery! That a crop of milk and butter may be gently abstracted from the soil for an indefinite period, without its showing signs of loss; in other words, that you can do that by indirection which you could not possibly do by direct means. In Virginia we have high authority for believing that "all flesh is grass," and that the milk differs no more from the grass from which it is elaborated than the bread from the corn or the flour from the wheat. The Doctor has jumped at the conclusion that butter is nothing but *air*, because the chemists tell us that *the pure animal oils* consist of nothing but carbon, and oxygen, and hydrogen, in the proportions which form water. But as we see it, butter is not a pure animal oil. A particular process is required to render it pure. There is much of the curd of milk taken up with, and incorporated in it, and this is one of the richest substances in phosphates and alkalies which is known.—There is, moreover, in all butter a mixture of whey, and this also contains more or less inorganic matter.

"A Virginia Farmer" has never doubted that a dairy farm might be made profitable, but he puts no faith in such exaggerated pictures as the one Dr. Lee has drawn.

Dr. Lee takes occasion to tell "A Virginia Farmer" that "at the great State Fair held at Rochester, New York, where one hundred thousand persons were expected to dine, good table butter was selling in the streets at eleven cents a pound, and this," he continues with an air of exultation, "*the product of free white labor.*"

For the life of me I can see no cause for peculiar satisfaction at this circumstance. I am sorry they did not get twelve and a half cents. We cannot afford to make it even at that price. The wages of labor are too high in Virginia for us to make butter at ninepence.

Dr. Lee tells us that before he removed to Georgia, to edit the Southern Cultivator, he was himself keeping a dairy farm with some fifty cows.

Now, sir, if an impoverished deserted old field in Virginia, of one hundred acres, will yield an income of three thousand dollars, the first year, under his system of management, and in ten years will be worth ten thousand dollars, and yield an income of five thousand dollars, and *pork without limit*, what must have been the profits of a farm of the same size in New York, under the Doctor's own eye? It is impossible for us to restrain our astonishment, that when the Doctor appeared to "be settled and every thing *to rights*, writing for the papers, lecturing on agriculture, and attending to the affairs of the nation like a good and patriotic citizen," while at the same time he was reaping a golden harvest from his dairy farm, he should have abandoned all the privileges of his situation, and yielded up, apparently without a struggle, profits which it would be idle for us to attempt to reckon.

The records of the Patent Office throw some light on this otherwise mysterious movement.

"Oh! that mine enemy would write a book!"

In the Patent Office Report on Agriculture for 1850, Dr. Lee publishes to the world that in the State of New York "there are three hundred thousand farmers who are yearly impoverishing their lands; that the finest wheat districts in the State, yield an average of only from five to eight bushels per acre; that much land is annually turned out in thin and poor pasture for a term of years." ("A Daniel come to judgment! yea, a Daniel!") "That in nearly half the counties of the State population has decreased, notwithstanding the rapid growth of her cities and villages, which demand an increase of farm laborers to supply the mere local markets." "A Daniel, still say I; a second Daniel." "The Genesee Farmer" and dairy husbandry, do not seem to have answered. Dr. Lee has administered his two panaceas, (either of which, he said, would do for Virginia,) yet the patient grows no better, but rather worse. The Doctor has become alarmed; has deserted his patient in extremity, and has sought, in a distant and strange land, a new theatre for his practice.

As I am only a plain, practical farmer, with no peculiar fitness to instruct others in agriculture, or in any thing else—with no single qualification for investigating the true principles or enforcing the right practice of this noble profession, which is not possessed in as great, or a greater degree, by each one of my associates, I here bid adieu to Dr. Lee and his heresies. If error has been exposed and truth vindicated, every thing has been accomplished which was proposed by

"A Virginia Farmer."

For the Southern Planter.

MANAGEMENT OF SERVANTS.

Mr. Editor,—At the request of some of my friends I send an article on the management of servants.

Young servants should not be suffered to run off and hide when the master comes up, or any other white person; they should be taught to stand their ground, and speak *when spoken to*, in a polite manner; have them well clothed, and this thing is more easily accomplished. A lot of ragged little negroes always gives a bad impression to strangers, and is often the cause of their running away and being

hard to manage when grown. Talk to them; take notice of them; it soon gives them confidence and adds greatly to their value. Some few persons are too strict with servants; but for every one who errs in this way, one hundred may be found who go to the opposite extreme, and let them idle away their time and do no more than half work. The result is, in many cases, the master breaks, the white family is left in poverty, and the poor negroes are sold. No one can treat negroes well who does not make them work, and take care of what is made and bought. They become restive, run about at night for want of exercise in the day, to pilfer, and visit, hear the news, &c. &c. Adams & Co.'s Express can't beat them in the transmission of all sorts of reports; they travel from ten to thirty miles in a night, and many, it seems, do with less sleep than almost any other animal. A great deal of whipping is not necessary; *some is.* If they know that they will be corrected when orders are disobeyed, in a proper manner, it is sufficient. Kindness when sick, and at all times when they deserve, or will *permit it*, is a great thing. The hope of reward and fear of punishment induce human action in master and servant. Never overtask your servant; feed and clothe him *well*, allow a reasonable time for sleep, and you will not be apt to injure him by work in the day. Never scold nor threaten.

Your friend,

W. W. GILMER.

Ivy Creek, Albemarle, March 17, 1852.

For the Southern Planter.

STEAM AND WATER POWER.

Mr. Editor,—In some essays which were published in the last volume of your useful journal I endeavored to enforce upon the Southern people the importance of greater attention to the advantages of steam and water power, and labor-saving machinery in general. I ascribed the superiority of our Northern brethren in the various mechanical operations to their greater enterprise in these departments.

I also urged it as the most efficacious "remedy" for the interference with the institutions of the South. Once convince the Northern population that they are dependent upon the slave country for a demand and market for their fabrics—without which their enterprises would sicken and perish—and it would do more to accomplish the desirable objects of fraternal intercourse and interchange than the whole political machinery could effect in a century. But manual labor cannot compete with machinery—nor can the staple commodities requiring it, be as profitable as those which are aided by machinery.

It is the manipulation required by the tobacco crop and the consequent number of *hands* to be supported from the soil, that is the fountain of that desolation, which invariably follows in its train, and not the exhausting nature of the plant itself.

In connexion with this subject I undertook to describe some machinery which I had attached to the water power of a grist mill—consisting of a grist mill, also fixed to crush and grind grain and cob together, with a fan to blow off impurities—a large up and down saw, and a small one—a circular saw in a work bench—a turning lathe—a grindstone, &c.—all propelled by the same water wheel, at comparatively little expense, and by a very small stream. Having the workmen, and various materials convenient, I was induced to enlarge the operations by the addition of flour fixtures, besides others, which, commanding an extensive custom, required the aid of some other power. This was supplied by a steam engine which I had an opportunity of purchasing with a warranty of successful performance at a comparatively low price, having been previously used in a saw mill. While other matters may be incidentally discussed, the chief object of this communication is to announce the perfect and successful harmony of action between steam and water power, as I deem it the duty of every citizen, particularly every farmer, to communicate whatever he may deem important to the promotion of the agricultural interest and whatever may be incidental and auxiliary to it. There is no difficulty in propelling the *whole* machinery (though perhaps not all at one time) either by water alone, or by steam alone, or combined in equal quantities, or with more of one and less of the other. This, I presume, has been done repeatedly in other sections, but I have never seen it attempted in the South, except at the Swift Creek Cotton Factory, near Petersburg, where, I believe, it did not succeed well, in consequence of some defect in the manner of its application. It can be attached to any part of the machinery which will allow a band-wheel to connect with the band-wheel of the engine. My saw mill was propelled by a horizontal shaft connected by a small spur-wheel with the driving-wheel of the grist mill. On this horizontal shaft was a face cog-wheel, about eight feet in diameter, which propelled the saw mill. I had nothing to do but to extend a band from the band-wheel of the engine on to the driving-wheel of the saw mill, which is so connected with the other machinery (though easily detached) as to propel the whole, if necessary. I have had an opportunity of testing its performance fully, for during the unprecedented dry fall it has been necessary to use the engine in assistance of the water power, or without it, for more than sixty days in succession, and a large portion of many of the nights—as the pressure on the various operations, particularly the flour department, was very great. The hands about the mill were of more than ordinary intelligence, but had never managed a steam engine. I have never, however, had any difficulty on this ac-

count. There being a safety valve to let off the steam long before the capacity of the engine is filled, and the water being made hot by a condenser before it is conducted into the boilers, I do not see the danger from bursting. I understand accidents of this kind generally happen from the sudden rush of cold water into heated boilers. But this is so situated that by means of a lead tube from the forebay a gradual supply is always afforded to the condenser, where it is heated in its passage to the boilers. My engine was of about eight horse power, with a single boiler. Another boiler was added, which would probably increase it to twelve-horse power, though I have rarely seen it up to half its power.

It might be deemed useless to communicate the successful co-operation of these two elements without discussing the expediency and profit of their use or combination. From my experience I certainly would not recommend the erection of a *grist* mill to be propelled by steam for the benefit of the toll—nor, indeed, unless in a very favorable position, any one mill, though for wheat or sawing it might be profitable. The question might be considered whether a person might not use an engine for two months in a year at a loss to enhance very much his custom during the other ten months, as it is known that nothing so much enhances the custom of a mill as the certainty of always having the grain ground. Before I purchased this mill its custom would not have occupied it half of each day, and now the constant use of both steam and water would not supply half the demand; though this is ascribable much to the flour and sawing fixtures, which were not formerly attached to it. Each individual can judge for himself the effect to be produced by such arrangements, much depending on the location, &c. My object is only to announce the perfect practicability of what I have stated, leaving the expediency to be determined by the peculiar incidental circumstances. While I might doubt the policy of the expenditure for any one operation, I might not hesitate to recommend it where several can be combined. And though I might deem the warning "not to have too many irons in the fire" very wise and proper, in the general, still it might happen that after securing a certain amount of power and preparation for one department, (suitable also for others,) good judgment and prudence might require its employment for those other purposes. By putting one common rough band-wheel with slats four or five feet wide, (not costing five dollars,) on the horizontal shaft of the saw mill, I could run six bands, propelling that number of the different machines. Nothing is now required but the cost of a band and ordinary threshing box to thresh wheat, which is my purpose; and it can also be cleaned and manufactured on the spot. Without the least expectation of it at first, I found that in preparing for other operations, I had all the important and essential materials for an extensive tannery. Trees I wished to cut down to clear the land and supply timber for the saw mill, also affording fine bark, otherwise wasted; machinery for other purposes, which also grinds bark with great facility, and comparatively without expense. An engine is considered so important in the operations of a large tannery that it is considered a judicious investment, though used for no other purpose. By means of lead pipes the vats are filled with water without trouble, of consequence, which is boiled or heated by other pipes from the engine, so as to extract the substance from the bark in a very short time, and obviate the delay incident to cold or freezing weather, and lessening very much the time, and quantity of bark otherwise required. It is under the management and supervision of an intelligent gentleman of long experience both in England and this country, who is entitled to the credit of its peculiar arrangement, and fully open to the inspection and examination (as well as every thing about the establishment) of any person whose interest or curiosity might prompt it—not being restrained by any consideration of self-interest to withhold anything useful from any apprehension of competition, but anxious to communicate whatever may be advantageous to the community at large, or to individuals. Any person, however, would be much disappointed in anticipating any appearance caused by expenditure beyond the cheapest and plainest practical utility.

My remarks have been more diversified concerning the operations of a steam engine, because while no one department might justify the expense, the combination might. I look to the introduction of steam into the different ramifications of agriculture as one of the most certain and most important incidents and concomitants yet to be attained for general use. Some improvements, lessening the expense, and increasing the facility of managing it, are yet to be developed, and it is with much gratification that I perceive the interest on the subject evinced by premiums offered by the different agricultural associations. In addition to the practical advantage there is humanity and satisfaction in accomplishing arduous operations without the exertion and exhaustion of animal muscle.

With guano to fertilize the land for wheat, drills to sow it, reapers to cut it, steam to thresh it, and rail roads and other facilities to transport it to market, it would be difficult to prescribe limits to the productions of our country; and though the price per bushel might be reduced, the net income might still be enlarged, besides the comfortable and humane influences which peace and plenty would spread throughout our highly favored land.

These are objects of national importance, and as far as is proper should engage the attention of the government; and it is gratifying to witness its beneficial influence through the agency of the Patent Office.

If something could now be done within its

legitimate sphere to reduce the price of guano, and place it within the reach of moderate means, some atonement would be made for the neglect which this most important interest has heretofore suffered; and the politicians might thus secure the commendations which at their expense are bestowed on those who "make two blades of grass to grow where but one grew before."

EDWIN G. BOOTH.

Nottoway County, Va.

For the Southern Planter.

HOW TO ADVANCE AGRICULTURAL SCIENCE.

Mr. Ruffin,—The great reproach of agriculture has long been its slow progress toward improvement. Should I have hit upon one chief cause of this, and in some degree its remedy, you would, I am sure, value the feeblest ray of light on this our great national interest.

Agriculture is an experimental science, with this striking peculiarity, *that a whole year is required for one experiment.* When the falling of an apple suggested to Sir Isaac Newton an inquiry as to its cause, he could repeat that or similar trials to any desirable extent in a short time. So also of chemistry and most other objects of experimental scientific research.—This difficulty as to *time* is plain and undeniable, yet I have never seen it insisted on, or turned to any practical account. The remedy would seem to be to combine the united efforts of many observers, such as we may now find in our State Society. The true key to progress in this work has, I think, been found by the "Hole and Corner Club of Albemarle, No. 1," and only requires to be enlarged and applied to the whole State, to produce the happiest results. The leading idea of their association was to devise, with due deliberation, a set of experiments for each year, to be tried by select committees, and their exact results to be reported. Should the Executive Committee of our Society do this office, of planning carefully, and, if possible, in tabular form, some twenty to fifty experiments, and then distribute the duty of their performance to some twenty or fifty persons for each one, in sections of two or three in different neighborhoods throughout the State; we could hope to learn something *certain* each year. Should all these substantially agree on their special subject, then it might be set down as *proven*, if any serious contradiction, try it again. These gentlemen of the Hole and Corner Club have settled sundry points to *their* satisfaction; but if tried on an adequate scale, general conviction would be the result.

After selecting the most important matters for full experiment, a list of queries should also be proposed, to invite observation and reflection, as well as to elicit information from such persons as may happen to know the proper answers.

A State fair for live stock, agricultural implements and rare productions, is necessary, as showing important results of labor and ingenuity in a pleasing and profitable way; as also to encourage association and more extended acquaintance among ourselves. But so far from being the chief object of our Society, I rather look upon them as necessary evils.

Should these views meet your approval and be carried out, I shall feel highly gratified; for I really believe that the talent and energy of our State thus directed and made co-operative, will do more to advance our science than the isolated and random efforts of "all the world beside." The advantage of a State Society to draw forth and diffuse what may be already known on agriculture is very great; but the above views seem to imply an absolute *necessity* for such an institution to insure any *progress.* They certainly afford the strongest argument I can conceive for the incorporation and endowment of our Society by the Legislature, as well as for its cordial support by all who are, or wish to be, improving farmers.—As soon expect an *individual* to build a rail road and drag the car himself, as to push forward the car of agricultural science alone.

Yours, sincerely,

THOMAS W. MERIWETHER.

February, 1852.

For the Southern Planter.

TOBACCO.

[Continued from January No. of Planter.]

In our first article upon this subject, we brought the crop up to the process of *hilling*, and this we recommended should be done *early* while there is "*season*" in the land. In a full crop this is often impracticable, and the planter is forced to depend for season upon the rains that fall after hilling. This should not change the shape of the hills. They should still be pointed and only so many cut off in anticipation of a shower as you have plants to fill. If cut off and allowed to stand for any considerable time the hills bake and require freshening up before being planted. Plants stand better in hills freshly cut off. It is a common error to cut off hills too high. An elevation of six inches above the common level is sufficient on ordinary land. Indeed we consider land unfit for tobacco that requires higher hilling. Wet spots, however, occasionally occur in land cropped in tobacco, which rather than leave unoccupied we plant, and do so by giving increased height to the hill. In advocating low hilling and priming, our friend Gilmer says, "it is better to have

lugs at *bottom* than at *top*," and we agree with him.

Planting with *too much season*, (upon red stiff land particularly,) is fatal to a crop, as clods are thus formed about the roots of the plant that no after cultivation can reduce. A safe rule is never to plant tobacco until the land is sufficiently dry to work with a hoe.

Many persons, (overseers particularly,) err in not allowing plants to attain proper size before setting them. Small plants may be used in *new ground*, but never in old land, except very early in the season, when the beds require *thinning*.

In planting it is only necessary to observe the following precautions: First, to insert the plant a little below the depth at which it grew in the bed—straightening the roots in so doing. Secondly, to press the soil well about the root; and thirdly, to avoid bruising the plant either with the stick in pressing, or the fingers in holding it. Then fold the leaves gently to the north, and place a clod or stone on the south side so as to shade the plant from the sun. This clodding is necessary except in long continued rains, when the roots will take hold before the sun kills the bud. A thunder shower is not sufficient to dispense with clodding; on the contrary the hill being heated by the sun, a sudden shower will scald the plant, unless protected, as recommended. The clods should be left on until the roots have taken hold, which is usually in from four to seven days, and then removed in the evening.

If planting be done late plaster should be applied to the bud as soon as the clods are removed, but if the crop be forward this operation may be deferred until the first of June. Plaster is indispensable to the tobacco crop—increasing its weight twenty-five per cent. When applied to the bud, a very small quantity is necessary—say from one half to a thimbleful. It is hardly necessary to say that missing hills should be re-planted. This, however, should be done as soon as possible, so as to insure an even crop, and it is better to get a perfect stand upon one land before you commence on another.

The amount and kind of cultivation depend so much upon circumstances, that it is difficult to lay down any general rules for working this crop. It is all important that tobacco land should be kept at all stages of the crop thoroughly *light and clean*. Of ordinary seasons, as a first working, we break the land, if free of grass, by striking three licks to the row with a new ground coulter—or if there be much grass, running twice with the coulters and spliting the list with a shovel plough, and then with hilling hoes scrape down the hills, covering up what grass the ploughs have left, and breaking the crust around the plant. In dry weather it is well to draw a little loose dirt about the root.

The next working we give with the shovel ploughs, breaking the land and covering up the grass, and follow with the hoes, drawing the dirt to the hill, or "hilling up;" and if the plant be of sufficient size, "priming off" the lower leaves and putting fresh dirt about the roots. This will suffice for new ground, but old land will require another working, which is given with the *plough* and hoes, if the size of the tobacco admit of it—otherwise with the hoe alone.

The height at which tobacco should be "*primed*" depends upon the variety cultivated. We prime the Ruffle to about six inches. When the plant has attained sufficient size to give the proper number of leaves above this priming, it should be at once *topped*. This is done by breaking out the bud with such care as not to injure the top leaves, which are very delicate and easily injured by rough handling. Experience soon renders a hand expert at this operation, and it is well to leave it to a few hands who have acquired this experience. Like every other operation in tobacco topping should be done *in time*, as the smaller the bud the slighter the wound inflicted upon the stalk by breaking it.

Early plants on rich land may be topped to *nine* leaves, but we aim to bring the crop generally to *eight*, to which number we top until the 10th August, when we fall one leaf for each week.

About the 10th of August it becomes necessary to "worm and sucker" the crop once a week. Suckers should, under no circumstances, be allowed to grow longer than a man's finger, as their growth greatly exhausts the plant. Every planter should wage constant war upon the *tobacco fly*, and to this end we advise the cultivation about the house of the sweet or monthly honeysuckle, of which the fly is very fond. One of our neighbors, from a few bushes, destroyed several thousand flies last season.

As the tobacco plant ripens it thickens up, becomes brittle, (breaking when gently pressed between the finger and thumb,) and loses that peculiar fuzzy appearance it has when green. Experience is required in judging when a plant is ready for the knife. More persons err in cutting too green than in letting the crop stand too long. As a plant is cut it should be inverted over its own stubble and allowed to stand until the sun *limbers* it sufficiently to admit of its being handled without breaking the leaves, then collecting the plants, stack and cover with bushes, &c. so as to protect against sun-burning. It is well to freshen up the land on which tobacco is stacked to prevent *coddling*. The plants may either be hauled to the house and hung, or hung in the field, shingled down, and hauled upon the stick. We usually hang about nine plants to the stick, and place the sticks about eight inches apart in the house. We prefer housing the crop at once to scaffolding.

Having allowed the crop to yellow, we apply slow fires at first, and increase the heat gradually until about the third day, when full heat may be applied. The great danger in

firing is in applying too much heat at first. We think a better color is given by allowing the fires to go down at night than by keeping them up constantly. The firing should be continued until the stem is thoroughly cured up; and if the crop be allowed to hang in the house until warm weather, must be removed in warm damp weather to prevent mould.

WM. GARTH,
R. W. N. NOLAND.

Ivy Creek, Albemarle, Va.

For the Southern Planter.

COLIC AND BOTS IN HORSES.

The horse to the farmer is the right arm of his power, yet his diseases are the least known, and the least intelligent prescribe with confidence for all his ailments. There is, perhaps, not one of our domestic animals whose whole natural habits are so changed by his treatment. Instead of the green herbage and free air of his natural pasturage, he is confined to close stables, and fed upon heating and inflammatory food; hence in his domesticated condition, no animal is subject to such violent inflammations, which run their career to gangrene and death, with such fearful rapidity, that his health has been classed as one of the three most uncertain things, viz: "the beauty of a woman, the love of a boy, and the health of a horse." Whatever be the seat of his disease he has but one mode of indicating suffering. Thus a foundered horse will roll violently from the pain of spirits of turpentine poured into his feet, and with inflammation of his lungs he puts his nose to his flank. What presumption then is it to administer whiskey, spirits of turpentine, and a score of other inflammatory medicines to an animal already suffering from a dangerous inflammation of some vital organ. I have seen somewhere an allegorical painting of a physician represented as a traveller in the dark, his medicine a bludgeon in his hand, the patient his dog, the disease a wolf attacking the dog, and the physician laying on with his bludgeon, knocking over the patient as often as the disease. How much worse must the poor horse fare in the hands of brutality and ignorance.

Of horses examined by myself after death, one feeding heartily and apparently well at night and found dead in the morning, had suffered from violent inflammation of the stomach; the cuticular coat having extensively separated from the muscular—a second died from inflammation and gangrene of the large intestines—a third from inflammation and gangrene of the small intestines—a fourth from inflammation of the lungs. In every instance a destructive inflammation of some vital organ. Yet the practice in every case was to administer remedies calculated to aggravate the inflammation. Horses have doubtless often got well in spite of these remedies—but with an animal predisposed to such inflammatory attacks, would it not be the more prudent plan to adopt another class of remedies. Bleed freely first, and then administer mild cathartics, with large doses of laudanum, to relieve pain, spasm or stricture. The effect of a large dose of laudanum is the reverse of a small one—it produces the most perfect relaxation. This remedy would be as efficient in colic, and would guard against its termination in inflammation. A weak solution of lye is often a safe and efficient remedy in this disease, the lye operating as super carbonate of soda.

Where the distension was such as to indicate a dangerous accumulation of air, the medicine for hoven cattle, viz. 2 drachms of the chloride of lime, dissolved in two quarts of water, to be repeated within an interval of an hour, if necessary, might answer perfectly well. The air generated in the stomach or intestines of the horse is the same as that generated in hoven cattle, viz. sulphuretted hydrogen. Upon introducing the chloride of lime into the stomach of the hoven animal, the chlorine drops the lime, unites with the hydroden, and forms muriatic gas. This gas is absorbed by the water of the stomach and forms muriatic acid, its bulk being reduced a *thousand* fold; the muriatic acid unites with the lime and forms the harmless muriate of lime. Thus has science by her deductions introduced one of the most valuable of cattle medicines. This is no theory, but found in practice to be true in every particular. With cattle it should be administered by means of the stomach pump.

In Europe veterinary surgeons and physicians are educated with far more care to administer to their domestic animals than we often educate our physicians to minister to ourselves. They have there the same parasite, the bots or grubs that we have here, yet those veterinarians consider it as harmless. "The bots cannot, while they inhabit the stomach of the horse give the animal any pain, for they are fastened on to the cuticular or insensible coat. They cannot be injurious to the horse, for he enjoys the most perfect health, while the cuticular coat of the stomach is filled with them. They cannot be removed by medicine, for they are not in that part of the stomach to which medicine is usually conveyed; and if they were, their mouths are too deeply embedded in the mucus for any medicine that can be safely administered to effect them."

If the horse is opened the moment he dies, they are never found to have attacked the stomach. If he is killed suddenly in health and lies until he is cold, they are found always to have eaten through the stomach. The bots are licked off by the horse and carried with the food into the stomach, where they attach themselves firmly by means of a hook on each

side of the mouth to the mucus membrane. When full grown they pass out with the food, burrow in the ground and transform into the fly. When the horse dies and his food fails, it is probably instinctive in them to cut their way out. In a horse that had died from an inflammation of the stomach, the mucus coat having extensively separated, they were found gathered upon the sound parts which they had cut through, the inflamed portion having no trace of injury from them. In supposing that grubs are a disease of the horse, we have attributed effects during life to causes happening after death—and what nostrums have been forced down the throat of the poor horse to cure this imaginary disease, and with what confidence has the stomach, perforated after death by the grubs, been shown as the cause of death!

TH. J. RANDOLPH.

For the Southern Planter.

Mr. Editor,—The interest which has been awakened in different parts of the State, in behalf of the cause of Agriculture, has occasioned frequent calls for the form of a Constitution, adapted to the organization of local or County Societies, to meet which, I beg of you the favor to publish the annexed in the Southern Planter. ARATOR.

Constitution of the Agricultural Society of the County of ———.

1. The style of this Society shall be the Agricultural Society of the County of ——; its objects shall be to improve the condition of Agriculture, Horticulture and Household Arts.

2. The Society shall consist of such persons as shall signify their wish to become members, and shall pay, on subscribing, not less than —— dollars, and annually, thereafter, not less than —— dollars; and, also, of honorary and corresponding members.

The officers of the Society shall consist of a President, six Vice Presidents, a Recording Secretary, a Corresponding Secretary, a Treasurer and an Executive Committee, to consist of the officers above named, and five other members, of whom five shall constitute a quorum. The payment of $20 or more, shall constitute a member for life, and shall exempt the payer from annual contributions.

The annual contribution for membership shall be considered as due, and payable on the —— day of ——, in each successive year.

The Recording Secretary shall keep the minutes of the Society.

The Corresponding Secretary shall carry on the correspondence of the Society, with other societies, with neighborhood clubs, and with individuals, in furtherance of the objects of the Society.

The Treasurer shall keep the funds of the Society, and disburse them on the order of the President or Vice President, countersigned by the Recording Secretary, and shall make a report of the receipts and expenditures of the Society at each annual meeting.

The Executive Committee shall hold stated meetings, and adopt particular regulations for carrying into effect the general objects and instructions of the Society; shall take charge of and distribute or preserve all seeds, plants, books, models, &c. which may be presented to the Society—and shall also have the charge of all communications designed or calculated for publication, so far as they may deem expedient, shall collect, arrange and publish the same in such manner and form as they shall deem best calculated to promote the objects of the Society.

5. There shall be an annual meeting of the Society, at such time and place as the Executive Committee may appoint, at which time all the officers of the Society shall be elected, who shall serve until their successors are appointed, and shall have power to fill all vacancies occurring by deaths, resignations or otherwise, until the next general meeting of the Society.

Extra meetings may be convoked by the Executive Committee.

Fifteen members shall be a quorum for the transaction of business.

6. This Constitution may be amended by a vote of two-thirds of the members attending any annual meeting.

For the Southern Planter.

GOOD MANAGEMENT.

Mr. Editor,—Permit me to introduce—through the columns of your valuable agricultural journal—to the attention of the farming public, the system and management, so plainly visible, on the premises of Daniel Jones, Esq. of James City. Having been afforded the gratification of visiting his farm, thereby receiving an ocular demonstration of his priority in agriculture, as well as the nurture of stock, I take the more pleasure in holding him up as a beacon, to guide his neighbors to that distinction and supremacy, that he has so meritoriously attained, by his untiring endeavors to improve in that science, the colors of which he has so gloriously borne. He has not only proved his loyal devotion to the cause of Ceres, but his pastures also stand unsurpassed. I have seen, coming forth from them, in unbroken phalanx, his herds of cattle, looking little inferior to those raised on our Western prairies. My attention was also directed to a group of young hogs, evidently showing the choice contents of the granary. Upon inquiry, I was informed that, for many years, Mr. Jones has been an unremitting sub-

scriber to the Planter, to which is doubtlessly attributable his success.

To those residing near him, I would say, examine for yourselves—and to those at a distance I would suggest, that they join me in an earnest solicitation to Mr. Jones, to appear within the Planter, for their edification and improvement. Then we may hope for a re-invigoration of our worn-out Virginia lands. AGRICOLA.

THE SOUTHERN PLANTER.

RICHMOND, APRIL, 1852.

TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. SIX copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

☞ Subscriptions may begin with any number.

☞ No paper will be discontinued, until all arrearages are paid, except at the option of the Publisher.

☞ Office on Twelfth, between Main and Cary Streets.

POSTAGE ON THE PLANTER.

The following are the rates of postage on the Planter, *per quarter*, for the distances annexed—to be paid quarterly in advance:

Not over 50 miles, 1¼ cents.
Over 50 and not over 300 miles, 2½ cents.
Over 300 and not over 1000 miles, 3¾ cents.
Over 1000 and not over 2000 miles, 5 cents.
Over 2000 and not over 4000 miles, 6¼ cents.
Over 4000 miles, 7½ cents.

TIMELY WARNING.

All subscribers who do not order a discontinuance before the commencement of the new year or volume, will be considered as desiring a continuance of their papers, and charged accordingly.

STATE AGRICULTURAL SOCIETY.

The Executive Committee met in Richmond on the 19th of February, and adopted a constitution and a scheme of premiums for exhibition. We shall publish such part of our proceedings as we deem interesting in our next paper. At present we have no room for them. The scheme of premiums we are particularly pleased with, and call attention to it now in advance of its appearance.

We learn that the application to the Legislature for an appropriation is very favorably received. We are glad to hear it, and hope we may not be put off with the excuse of hard times and heavy taxes. If the farmers of Virginia would only stir themselves, and write to their members in the Legislature, there could be but little doubt of our getting all we want. As it is we can but hope.

We are sorry to have to report but a small addition to the list of members of the Society. The farmers cannot be got to take the trouble to solicit subscriptions, and even here in the city of Richmond, where there are not less than one thousand who would join at a word if the thing was brought to their minds, we have less than two hundred. We hope the farmers can be shamed into something better.

PLANTATION AND FARM BOOK.

Mr. J. W. Randolph, the publisher, has sent us the Plantation and Farm Instruction, Regulation, Record, Inventory and Account Book, for the use of overseers; and for the better Ordering and Management of Plantation and Farm Business in every particular.

We have looked into this book, which is so arranged as that an overseer or the owner, if he chooses, can keep an accurate record of all his transactions and of all his stock, implements, &c. To men who mean to do this, *as all should*, it is a valuable work and will show them how to do it. But as farmers generally conduct such things, it will not be of much use, not from *its* defects, but from their own.

We hope that many farmers will buy the work, (it costs only $2 for 103 pages ruled and otherwise arranged with great system, including many very valuable tables and general remarks,) and make an effort to keep things straight.

CORN—VERY IMPORTANT.

As many persons will have thinned their corn before the May number of the Planter can reach them, we advise our readers now to leave a part of their crop only partially thinned, for the use of the hogs. Let them leave at the rate of an acre for every thirty hogs, the corn to be cut up and fed whole to the hogs, stalk and all, as soon as they have gleaned the harvest field, or before, if they cannot be put into it. This is no theory—the best farmers in the State have practised it for years. It fattens hogs in the summer, saves corn, and is both cheaper and better than root crops. We have tried it for eleven years, and never regretted it. We shall speak of it again in May.

ADVERTISEMENTS.

We have nothing to do with the advertisements of the Planter. We make not one cent by them, and make it a rule to recommend nothing that we do not approve, whether advertised or not. But as some complaint has been made, we beg leave to present the explanation of the proprietor. Mr. Bernard says that so long as the subscription list is as meagre as at present, he cannot afford to reject advertisements. The Planter is now larger than it was at first, though the price has not been increased—more than a third larger—and it is half the size of the old Farmer's Register, which cost five times as much money. We are daily receiving letters of encouragement and approbation, and shall try to keep up to the high standard we have adopted, but we shall be compelled as *a revenue measure* to insert advertisements. We shall, for the most part, however, only put in such as are connected with the farmers' interests.

Our list of payments is published in the Planter because it saves postage, either to the subscriber or the publisher. Whenever a subscriber desires a *receipt*, he can get it, but he will have to pay postage. Postages are a heavy item in a newspaper office.

We ask attention to the communication of Mr. Richardson. It alone is worth to those who seek to improve, ten times the price of the Planter.

CORRESPONDENTS.

Several very good communications on hand are unavoidably delayed. They shall appear in their order.

For the Southern Planter.

MANAGEMENT OF A FARM IN PRINCE EDWARD.

"He who by the plough would thrive
Himself must either hold or drive."

So said Benjamin Franklin, a great practical man. In this part of Virginia, where the lands are poor and the people not the most skilful in managing them, I, on my part, determined from early life to manage so as to make up by energy, economy and neatness in executing my work, the deficiencies of my land in rich and valuable qualities; and unless I am much mistaken the individual who fails to act upon this principle, whether in Virginia or elsewhere, must see his property rapidly diminish in value, and finally change hands. By birth a Virginian, and even believing that I live in a land possessing as many or more advantages than any State in the Union, I have, with an onward march, a steady course, and a never-tiring disposition, worked out faithfully whatever I undertook to do, and will hold on to the old ship until she sails right; aiding, in my humble measure, in the great and good work of *reform*. When passing through many parts of this country, I view the work of our ancestors, the fields made barren by their reckless mismanagement, for a moment I am filled with doubt and overcome with gloom and sorrow, and ask myself "can the work of reform be carried out so as to stimulate the youthful sons of Virginia to remain and lend a helping hand, or shall we by our bad example, continue to spread desolation and ruin, quietly folding our arms, and making no effort to check the current of emigration rapidly rolling on in pursuit of Western treasures?" Those who change their residences seek to benefit themselves thereby. Yet how often do we see this fair and glowing Western vision melt into gloom and ruin. True, many succeed: but such might attain the object of their ambition here as elsewhere. When once a change in Virginia management shall become apparent, and the current of public opinion shall set in this direction, then will a check be given to the restless and wandering spirit of emigration; then, and not till then, will Virginians settle down permanently and lend a helping hand to the great work of reform. I speak from experience. Virginia presents the greatest attraction to her sons; nothing is wanting but energy, a determination to go to work, and when once embarked in the good cause, not to spend a shilling where only ninepence has

been made, but to lay up something yearly; and never to cultivate five acres of land to make five barrels of corn when one will do the work; never to fatten twenty hogs for two thousand pounds of pork when ten will make the quantity; never to spread twenty loads of manure over two acres of land when it is not more than half enough for one. Let us try and work upon this principle, and we will make more money, improve our lands faster, live better and enjoy every thing around us, and the home we once thought of giving up to the stranger as worthless and uninviting will become a pleasure and a joy to us.

The above is a preface to a statement of my management of land and manures, and a partial account of my mode of cropping, &c. which a friend has requested me to send you. It may not be improper in me to do it, whether I shall be received familiarly or not by the more enlightened and skilful farmers and planters of Virginia, for it is a very poor flower that the bee can gather no honey from.

My principal crops are tobacco, wheat and oats; each crop being yearly turned into money as soon as it can be done, except enough wheat for family consumption and seed. The oat crop being valuable is likewise sold, except seed. I cultivate small crops of corn upon the three-field system, and never fail to make enough and some for sale; in fact, I try to sell something of every thing I raise. In the commencement of operations on my farm where I now live, seven years ago I laid off for tobacco and wheat, (my corn land being generally seeded in oats and the best parts in wheat,) seven lots, each being manured when put in tobacco. I generally seed three in wheat, one after tobacco and two on clover fallow, never permitting my lots to remain in clover for wheat but one year. But the lot designed for tobacco remains one year longer, as will be seen by the following diagram, illustrating the rotation:

No. 1.—1st year tobacco and wheat; 3d year wheat fallow; 5th year wheat fallow.

No. 2.—1st year wheat fallow; 3d year wheat fallow; 6th year tobacco and wheat.

No. 3.—1st year wheat fallow; 4th year tobacco and wheat; 6th year wheat fallow.

No. 4.—2d year tobacco and wheat; 4th year wheat fallow; 6th year wheat fallow.

No. 5.—2d year wheat fallow; 4th year wheat fallow; 7th year tobacco and wheat.

No. 6—2d year wheat fallow; 5th year tobacco and wheat; 7th year wheat fallow.

No. 7.—3d year tobacco and wheat; 5th year wheat fallow; 7th year wheat fallow.

Should either of the lots become foul with cheat or cockle, it can be easily remedied. When first heading out, a single hand with a scythe in a few days can remove all noxious and unwelcome visitors of this kind. As my little means and hands increase, I enlarge the size of each lot. Having carefully selected the best soils for these crops, good barns are built and located conveniently to the lots immediately on the side of the farm roads.

I find I cannot get on well without directing much of my time and attention to the subject of raising and applying manures. With regard to the latter I differ very much from many men called good managers, for I contend that all, and particularly farm manures, should be kept as near the surface as possible. I may be mistaken, but practice and experience have been and are my daily guides, and it would seem that any discriminating mind could readily see the superior results of that mode of application.

All manure raised after lot No. 1 has been manured and hilled up—the same having been completed by or before the first of May—is conveyed to lot No. 4. No. 1 being manured and hilled for tobacco, No. 4, designed for tobacco the second year, and Nos. 2 and 3, designed for wheat, as is No. 1, after the tobacco crop. I continue to carry off my manure through the summer and fall up to the first of of December to lot No. 4, and spread and coulter in when deposited, much pains being taken in spreading, and the heaps never being permitted to remain long unspread. After the first of December I cease to haul out manure, and break up that part of lot No. 4 not already manured, with three-horse ploughs. The rotation having been thus completed, as seen by the diagram, I return the eighth year to No. 1, for tobacco and wheat, as before. The whole surface having been manured welcomes me back, and I manure it again, with the promise of a better yield, both in tobacco, wheat and clover; and so on with the rest. By this rotation, continued from year to year, any estate may be redeemed.

After the first of December my cattle are brought to the farm-yard immediately in front of my stable door. The yard has a southern exposure, and ricks are made in it for straw or other coarse food: cornstalks and straw are deposited as fast as the cattle can trample them, the stable manure, with the aid of the mould of the earth, ashes, &c. being carefully spread every week over the entire farm-yard. This operation continues to the first of April, when the entire mass is formed into one bulk. When it begins to heat it is removed as quickly as possible to that part of the lot not manured by the first of the December previous, the land having been first well harrowed over. The summer and fall manured land, including cow pens, &c. being crossed with coulters, is harrowed in like manner. After which, instead of turning under any part of it, the whole lot is bedded with three-horse ploughs, then hilled into large hills, keeping the manure as near the centre and foundation of the hill as it can be done, and avoiding clay to much extent in the centre of the hill.

Summer cow pens are a part of my summer and fall manuring. Each of these, as often as a new one is made, is broken up with a two-

horse coulter, and lightly top dressed with chaff or wheat straw. Either aids very much in mellowing the land after being trodden, and by their use the pens can be removed sooner, so that a larger surface can be manured. All land manured in this way makes fine crops and is left by them in fine condition, though not better than from the summer and fall manuring. Grazing, except at certain seasons of the year, I am opposed to. At those seasons the cattle, though few in number, are kept in the farm-yard; plenty of litter is provided for bedding and a shelter to proteet them from the sun, in which way manure may be raised rapidly. I am very much inclined to think every farmer should adopt this method as much as possible. The manure I raise in this way is heaped and deposited before the first of December.

Some of your numerous readers may ask why scatter stable manure over the farm-yard? Because I think it the very best use I can make of it. Were I not a raiser of farm-yard manure, surely I would take off the stable manure to the land designed for a crop as fast as it was made. How often do we see a failure of crops from ordinary manuring, and particularly on thirsty lands in moderate seasons? The tender plant requires something to feed upon better adapted to its condition than coarse manure. I would as soon expect a newborn infant to eat bread as a tender young plant to take root on ordinary farm-yard manure, unless there should be a wet season, which is apt to give a poor crop.

My straw, stalks and chaff being about as much as I can turn into manure, I do not use leaves, which I think a very poor thing. My fodder, hay, oats, straw, chaff, &c. are all stacked on the lot intended for tobacco the next year. In handling these articles and hauling them from the stacking place there is an amount of loss and shattering which will improve two or three acres yearly. In the course of thirty years I have thus enriched from sixty to one hundred acres, which aids very much when manure is scarce. True, I run some risk of fire, lightning, &c. but I am willing to take it for such a result. Besides, nothing looks more ridiculous or slovenly than stacks all about on the farm.

I plant my tobacco as soon after the 1st of May as the plants are ready, never waiting for a season. Unless the beds are to dry, the hills are ready with a good season as soon as my hilling is completed. So soon as a stand is obtained, the entire crop is "sided" with the one horse Dagon plough and "scraped down," a quick operation. When the plant starts to grow, with the same plough I throw back the furrow and hill up, and repeat the operation as rapidly as it can be done, running the hill up of a good size, and of a sugar loaf shape. I avoid late workings, prime low and top to eight, nine and ten leaves, so as to have a uniform crop. By priming low and turning the hill up, as directed, the moisture is retained, and heavy and long continued rains pass off without firing the crop. Much good results from low priming—the crop matures sooner, is much richer and more leafy. Should the grass put up the latter part of August and 1st of September, let it come. In the case of the best crop I ever made, the crab grass grew very bold and headed out, and my neighbors asserted that my crop was terribly set in grass. So it was; but by design. That crop ripened finely. The last, being a wet year, grass aided very much in checking firing. In dry seasons grass will not interfere, and in wet one's it will produce no injury, but a great benefit. But on light, quick, gray lands, should the crop be a late one, adopt different management.

For fallowing wheat lands, I consider July and August the proper months. I never use the subsoil plough, but break up with a three horse plough, and re-fallow with the same. I prefer seeding from the 1st to the 20th of October, but rarely ever get done so soon. I like best a soil with a slight mixture of clay, and a good crop of clover, and weeds well worked in and brought near the surface. I keep the seeding up with the re-fallowing. I cover with drags; after them follow the hoes, distributing all turfy matter, breaking clods, &c. and levelling off all and every impression of the drag teeth, leaving the entire field as neat as the best cultivated garden. On all light, gray lands, unless too rolling, after seeding, (or before if likely to rain,) a careful ploughman, with the aid of a boy, lays off water furrows 13 feet wide. This is done with a two horse Dragon plough, its point two-thirds worn—any other not so much worn will throw up wheat and leave none in the bottom or side of drains; hand rakes are made for the purpose, and each furrow is raked back as laid off, consequently the wheat is not left in heaps. In order to check the force of water all lands laid off are angled, and each angle aids very much in doing so after heavy or long continued rains or snows. Should any washing appear, I use wheat straw in the place trodden in with the foot, which is all sufficient. I never make a gully, but try to stop all I can. I am opposed to hill side ditches, except in certain localities, believing that much injury results from them on light lands, particularly if they are half cut, and not attended to, as is too often the case.

The tobacco land is prepared and seeded in the same way as the fallow; and as much pains are taken in seeding oats. The scytheman can thus perform a better, easier and nicer day's work, and save the grain better. I cut close to the ground, whether the crop is heavy or light, and tie up in bundles.

For corn, the land after being ploughed is well prepared by drags. I never plant early; generally a month later than my neighbors; and by no means until every tobacco hill has been made. My work is then fairly before me and under my control, and every crop can

be kept in good order. Besides, corn late planted comes up and grows off much better, and gets out of the way of birds, worms, &c. much sooner, they having more to feed on. The past crop I did not finish planting until the first week in June, and never had a finer; true I had the advantage of the late rains. In planting I lay off the rows five feet apart, with a two horse Dagon running twice in the furrow, so as to open it as deep as the plough will cut, then sow guano along the row, at the rate of 200 lbs. per acre. A three-tooth harrow, with the front tooth out, will cover the guano deep enough; and after that, the corn is dropped and covered with the foot or hoe. Except in a very dry season, a good crop will be the result. The cultivation is done with harrows as much as possible.

I never make less than two hogsheads of tobacco to the hand, generally about three plants to the pound, except in difficult and bad seasons. I have increased my wheat crop since 1844, without the aid of guano, from 220 to upwards of 1200 bushels, though I seed only 20 more. Ten years ago my place did not yield 150 bushels, and none for market. Then it was a wreck: the assessor's books will shew whether there has been any improvement. I feel it and enjoy it, whether the books shew it or not. For the last five years my land, negroes, teams, &c. including every expenditure, nett me over ten per cent.; and my family enjoys a fair living in the bargain. During this period one crop was lost by hail and fresh, which was not balanced by the very high price obtained for the last.

I keep no overseer at home. I am by them as an old bachelor was by the girls. Being asked why he did not marry, he replied, "such as I would select to make me a good wife would not have me, and such as would have me are not worth having." So it is with myself and overseers.

H. G. Richardson.

Prince Edward, Feb. 2, 1852.

For the Southern Planter.

DRAINING.

Mr. Editor,—In my last, I promised you a communication on the subject of draining. I now proceed to redeem that promise—premising that, as I had resolved to "mend my ways" before the receipt of your private philippic against all villainous promise-breakers, generally and specially, you need claim no credit to yourself, for the tax I shall frequently attempt to impose on your readers.

In the system of husbandry pursued in many districts of our country, a striking defect, and one, on various accounts inexcusable, is the neglect of and apparent indifference to proper drainage. It would be interesting to ascertain the quantity of land on our farms not brought into cultivation, as also the quantity cultivated, but producing only a fourth or half crop from excess of moisture, and the probable annual products, if reclaimed by a judicious system of draining. A comparison of the profits of such lands in these two conditions, their superior fertility and increased facility of culture in the one case over the other, would readily indicate the importance of the subject.

By far the greater portion of the branch flats of our Piedmont district, was once very poor. Of this, we have abundant evidence in the traditionary history of the country, as well as in the character of what is now the subsoil. Originally the surface of these flats was composed of a tenacious, whitish clay, or of an admixture of clay and gravel almost impervious to water. Besides the often feeble but perennial springs found in these locations, and having no regular outlet, the rain water from the hills, gradually finding its way along the veins of rock or gravel, till they terminate on the beds of clay on the margin of the flats, issues forth in innumerable springs from the base of the hills, saturates the flats and forms unsightly and unwholesome bogs and marshes. The original settlers of the country, scarce of labor and having an abundance of rich lands, employed these *wet lands* as the convenient receptacle of the rubbish and useless timber of the adjacent slopes, thereby greatly expediting the heavy labor of clearing the land of its original forests. In the reckless mode of cultivation, then in vogue, of the surrounding hills in tobacco and corn, immense quantities of the richest virgin soil were washed down from the uplands by heavy rains, and spread over these flats. The annual decay of the luxuriant vegetation thus induced by these rich deposits, and the constant accession of additional mould from the hills, have, in process of time, formed a highly fertile alluvial soil to the depth frequently of several feet: effectually covering up and concealing many of the springs at the base of the hills, as well as those in the body of the flats. But these springs nevertheless exist, and the water discharged by them is found in or upon the subsoil, at depths varying with the depth of the alluvial soil. Hence it is, that, in very many instances, where the surface is apparently sufficiently dry to produce heavy crops, as soon as the growing plant has attained sufficient strength to send forth its roots to a greater depth in search of food, it comes in contact with a saturated subsoil, or the earth is kept too cold by evaporation, proceeding from the proximity of too much water, and the plant assumes a yellow sickly appearance, from which it rarely recovers. Hence, also, the necessity of deeper drains in such localities amongst us than in almost any other section: for if the hard pan or stratum of clay and gravel that, in all cases, under lies the alluvial deposit is not penetrated, the labor of draining is rarely remunerated. Presuming

that the character of the subject on which we are to operate is now sufficiently understood, we proceed at once to the task of reclamation.

The first and most important consideration, in surveying a flat with a view to thorough drainage, is the location of the principal ditch, into which the various small tributaries are to be conducted. Upon this often depends the success of costly operations. Its position should always be determined with reference to the lowest points—with as few angles or curves as possible—with depth sufficient to vent ordinary freshets, acting at the same time as a drain, and with all the fall of which the nature of the ground is susceptible. Having completed this as a base line of operations (and it will generally be found most judicious to draw it on one side or the other of the flat, as it thereby intercepts and receives at once all the springs on that side,) all other drains necessary to be made, should commence on this. These, it will invariably be found, should be extended to the base of the hill on the side opposite the main ditch, and sometimes intersected by others extending along the base of the hill, so as to form a diagram resembling the letter T. The depth of these lateral and cross ditches should be regulated according to that of the main one—the depth beneath the surface of the clay and gravel subsoil, (which should always be cut through,) and the degree of fall. The deeper they are the better, always observing to maintain a gradual and even descent to the main stream. In the beds of these cross sections, when completed, pure clear water, which before had no vent, will be frequently observed to boil up more or less boldly; and also on the sides, from between the loamy soil and clay subsoil, it will be found trickling into the ditch, discolored, and resembling the deposits from Chalybeate Springs. It is the latter chiefly, which is so fatal to growing crops, even in locations where the appearance of the surface gives no indications of its presence. My observation has led me to the conclusion that these cross or diagonal drains, at intervals of from twenty to forty yards, when effectually made, thoroughly reclaim all such lands, rendering them with good tillage, highly productive in corn, wheat and grass. It is sometimes exceedingly difficult in low, boggy marshes, to determine the precise location of a spring, from the quantity of water present at all seasons, on the surface. In many such, a dozen ditches, none of which happen to strike on the spring, may prove unavailing. The desired spot can always be ascertained and much unprofitable labor saved, by a careful examination in very cold weather. At such seasons, the water passing slowly through and over the mud becomes chilled, and freezes, except immediately over and around the spring. A stake set up at this point, designates the line of future operations. In many situations on our flats, this white clay soil, owing to peculiarity of location, is entirely free from deposits from the adjacent hills, and is invariably poor—extremely retentive of water, and unimprovable by ordinary applications of manure. When thoroughly drained, however, by intercepting latent currents and affording means for the rapid transition of rain water, the soil very soon assumes a darker complexion, becomes more friable, and by a light application of lime and manure may be made highly productive; but, without either, is greatly improved.

Open ditches in a soil upon which frost acts powerfully, should always be cut very sloping on the sides. One three feet wide at top need not be more than twelve or fifteen inches at bottom. By thus concentrating the current, casual obstacles are washed out and the formation of hammocks prevented. A due regard to neatness of appearance, as well as economy of soil and labor, requires that all lateral and cross drains should be covered. And it will always be found conducive to the strictest economy to perform the work of covered drains in an effectual and lasting manner. The depth of these drains will of course vary according to the situation of the ground; but whenever practicable, and the fall will admit it, they should be from thirty inches to three feet deep, and from eight to twelve inches wide at bottom, according to the material which is to compose the underdrain. In England and Scotland, where underdraining is carried to greater perfection than in any other country in the world, pipe tile, a very simple and not costly material, has superseded almost every other mode. In this country, however, this device has been but very partially introduced, and the most common materials in use are pine poles and rock; either of which answer a good purpose if skilfully disposed. Poles being less durable, should be used only where suitable stone cannot be obtained. They should be straight, from three to five inches in diameter, to suit the width of the bed of the ditch; one on each side, and a third resting on them so as to cover the aqueduct between them, which should be an open space equal to a curve of three or four inches. Any unavoidable openings between the top and side poles, should be chincked with split pieces of timber, to prevent the entrance of obstructions, and the whole covered a few inches with dry leaves, straw or sod. The drain is then completed—requiring only the earth to be drawn in and securely pressed down with the feet. Another excellent mode is, to break the stone into small pieces from one to two inches in diameter, and to fill the ditch with them to the depth of ten or twelve inches, covering it as in the case of poles. Through this bed of stone, the water finds easy access into the drain from the sides and bottom, and readily passes off into the main stream. The most common method when stone is employed is, to line each side of the ditch with suitable rock, resting firmly on the bottom, and to cross lay this with long flat pieces extending

across the ditch. This mode leaves a vent for the water similar to that between the poles, but in this as in that case, care should be taken to secure the openings against the admission of obstructions. The plan which I usually adopt is, to combine the advantages of the two methods last described by filling in on the rock culvert with five or six inches of small stone, so that, should the open vent from any cause become obstructed, the water can still find its way through the small stone without damming, and being forced to the surface.

In conclusion, I will submit a single suggestion farther. Our open ditches, once made, receive little attention afterwards, till the field adjacent is brought into regular cultivation. During this interval of neglect, (a period from two to five years,) they are partially filled up by the sliding of the banks, by dry weeds and grass, and by hammocks, formed in the first instance by very slight obstructions when the stream is low—thus increasing the labor of cleaning them, causing overflows, and choking the mouths of the underdrains—rendering them frequently useless. Now a little timely care may entirely obviate these difficulties. Immediately after heavy showers or freshets, when the current is very strong, a careful hand with a hoe should pass quickly down the streams, removing hammocks and other impediments. This will give increased velocity to the swollen current, which will more readily wash out the sediment that may have formed, and render the stream less liable to future obstructions. The time thus consumed would be insignificant compared with that ordinarily required to effect the same object and the work infinitely better done.

J. NEWMAN.

Feb. 11th, 1852.

For the Southern Planter.

LIME.

Mr. Editor,—The subject of lime is one that claims the attention of the farmer at the present day—and like all other subjects is liable to abuse in its application, and is susceptible of criticism and investigation. It is stated and proven by analysis that lime enters into the composition of all the crops which we cultivate, but to what extent is not known to the great mass of farmers, nor will they be able in this generation to ascertain the fact. This being the case, it will be found necessary to avail themselves of all the light which may be gathered from the labaratory of nature, reason and experience; but there is a lamentable fact, which needs not the light of philosophy to explain, that men are so wedded to their opinions, and attach so much importance to self, they are not to leave the old paths in which their fathers have trod. In the year eighteen hundred and thirty-seven, I luckily fell in with the Essay of Mr. Edmund Ruffin on Calcareous Manures; being delighted with the work I made it a matter of study; but theory without practice is dead, being alone, as one in olden times stated. Says he, "show me your faith without works, and I will show you my faith by my works." Thus I commenced the application of lime, and have continued it to the present day, and expect to do so as long as I shall remain on terra firma. I hold lime in the highest estimation, and the true basis of all farming operations: yet I do not view it in the light that many do. After years of practice, I view lime in the very light of Mr. Ruffin, that it is not a manure, but a corrective of acid, and decomposer of vegetable substances; and although after an application of lime, some crops seem to luxuriate as though they had been living on the fat of the land, only proves that the disorder has given way and obstructions have been removed by the application of lime. I have not discovered the increased growth anticipated by others, but have generally an increase of perfection in weight and measure; it is generally the case that persons unacquainted with lime use it too freely. In this country and Europe there are some who advocate from two to five hundred bushels to the acre, and I am willing to give the credit for their opinion. My experience would not allow me to use more than fifty bushels to the acre; and I am fully satisfied that ten bushels of strong quick lime will be more than any of our cereal crops will consume, even though it were known by analysis that they consumed more; and at this period of my communication I will state an original idea, which is this, does not the preparation of a substance, and the analyzing of that, in some way or other change its nature? To be plain, does not the burning of wheat straw and like substances change their nature? I am not prepared to say it does, or does not. Yet I am prepared to say, that the action of fire does change the entire nature of other substances, and they cannot by any process be brought back to their original state. I should be glad to see this question answered. From the above premises my conclusions are the following: and first, as we, the farmers of Virginia, have no surplus capital, it will be to our advantage to make an equal distribution of what we have, and instead of applying fifty bushels of lime to the acre, apply twenty, which will be sufficient. We shall get over our fields much sooner, and can commence a second application, which should be done every third year. Another important item with the farmer is time; and it is the hobby upon which many ride to ruin. Well, we will try to inform our friends how to save time. One of the great ways is to spread every thing you haul out in the name or shape of manure from the cart. Of course we do not suppose that any one has such a thought as to drop lime in heaps—

if they do they are twenty years behind the times—and I fear, circumstances being equal, they will remain so. Manure may be spread from the cart perfectly regular. It will never be done so if dropped in heaps. Should the manure be coarse, pitch forks should be used—if fine, long crummy shovels. My lime spreader stands in the cart and can spread almost to perfection ten corn rows at a time. I have never used any other than shell lime. I have green poles cut to form the outside of the kiln—commence by laying three logs on the ground, at equal distances, to give good ventilation. Lay a bed of good dry wood—then notch four poles as for a hog pen—fill in with shells, and so on to the top. When the kiln is completed, it will be found best to set it on fire at the commencement of a moderate rain—the water keeps down the heat. When the kilns are burnt commence hauling. Do not wait for rain or air to slack the lime. Throw on a few buckets of water, and in a few minutes you will have a load slacked. When the cart leaves throw on a few more, and so on, and you will have nice, dry fine lime, and you can lime your land as it ought to be done.

I leave the subject for the consideration of those who may think it worthy their notice.

C. C. S.

Northumberland Co., March 1, 1852.

For the Southern Planter.

MANAGEMENT AND APPLICATION OF MANURES.

Mr. Editor,—It was an apothegm of the ancient Jews "that no man discharged his duty to his country, who died without having planted a tree, built a house, or left a child behind him." And I think, if applied to the tiller of the soil in our age, that it might be appropriately improved by adding, and without having "made two blades of grass to grow where but one grew before."

The writer has been farming some six or seven years, and during that time has been a close observer of all its operations, with a view not only to its immediate profits, which have always been remunerating, but also to the improvement of his land. And it is with the hope of being able to assist some of his younger brethren of the plough, that he ventures to appear in the pages of your journal, with a few general suggestions on what he conceives to be the best management of manure and its most economical application.

The farmer wishes the quickest returns for his labor, and no small portion of it would be occupied in making manure, if the returns from it were generally as quick and as remunerative as they can be made. But he cannot afford to wait for years before reaping the advantages of that labor. And if the manure should be spread upon grass, in the spring, for fall fallow, it will be two years before it can pay more than the improvement to the land. And if left in the farm-pen during the summer (as is too often the case,) to spread upon wheat in the fall, the loss will be great and the returns from it no sooner, and not so much. But if properly prepared and in time for a summer crop, and the greater part of it can be, it is worth almost as much as stable manure for corn and tobacco, will produce a good crop of wheat after the corn, and secure a good, healthy stand of clover. We endeavor always to have our farm-yard manure moved early in March to the field upon which it is intended to be used, and there composted with the manure from the horse stables, cattle stalls, &c. by first spreading down a layer of farm-pen manure, about twelve feet wide, twenty-four feet long and eight or nine inches thick, and covering this over with a few bushels of charcoal dust, if it can be obtained, or the ashes from coal kilns will answer by increasing the quantity; then a layer of stable or other rich manure three or four inches thick; to be well dusted over with plaster. The pile should now be chopped over with a grubbing hoe, in order to mix the manures. Then commence again with the farm-pen manure, and continue as before until the heap is four and a half feet high, and about eight feet on the top. In a month the whole mass will be equal to stable manure, and if the season should be dry, will produce a better crop. We have occasionally had to reverse the heap, from fear of too great heat, but not often found it necessary. Hogs should not be permitted to run to them, as they would tear them down, and very much retard putrefaction.

After cleaning out the farm-pens, they should be again well littered with leaves, weeds, corn-stalks, straw, woods mould, &c. to at least one foot deep, to absorb the liquid excrements of the cattle, and to be composted again later in the spring. Any coarse manure that cannot be reduced to a proper condition for the summer crop may be spread upon young clover, or on the field intended for fall fallow as soon as the cattle are off of the yard.

I am aware that in some of the remarks that I have made, that I have run counter to the views of some of the best practical farmers of our country. This, however, although I may regret it, I could not avoid without laying aside my own experience.

I first adopted the system of composting all of my coarse manures in the spring of 1848, from the circumstance of having used a large quantity of farm-yard manure the two previous years for corn, turning under a part of it and spreading the rest on the surface, without, in either instance, having experienced, apparently, any benefit to the corn crop, and but a very slight improvement to the succeeding crops of wheat and clover.

I accounted for its want of action from the fact that decomposition was very slow and not sufficient, at any time, to generate the am-

monia, of which its nitrogenized matter was susceptible of being converted into, or to evolve in any active form, the fertilizing principles contained in the matter of which the manure was composed.

Influenced by these views, I have, for the last four years, composted all of my coarse manures, with the view of promoting more rapid decomposition. And in this way of preparing from the crude material, a fit food for plants, of easy assimilation by them and ready for their wants, without, in any instance, having met with disappointment in the value of manures in this way.

In composting manures containing much animal matter, care should be used to avoid making the heaps too high, as the heat caused by too rapid fermentation, together with heat possibly evolved by the absorption by the water in the manure of any free ammonia that may be extricated, would become so great as to defeat the object in view, and not only vaporize all of the ammonia, but leave a pile of dry, burnt material, scarcely worth hauling.

In order to furnish a sufficient quantity of sulphuric acid to form a fixed, but very soluble salt with the ammonia, plaster should be used abundantly, and charcoal dust to absorb the gaseous elements of the manure should not be omitted. We use plaster with all of our manures, and think to advantage; but would prefer not to use it with guano, which contains, already formed, the carbonate of ammonia, and not being subject to the ordinary influences of our decomposing vegito-animal manures, its ammonia is not so liable to be driven off; but when mixed with the earth it unites with an additional equivalent of carbonic acid, forming a bi-carbonate, much less volatile than the carbonate, and not nearly so soluble as the sulphate, which dissolves in three times its weight of cold water, and is therefore liable to be carried off in solution whenever much water falls to the earth, and which, I think, accounts readily for the want of action from guano in many instances when mixed with plaster.

That the carbonate of ammonia in guano, when mixed with the soil, becomes a bi-salt, much more permanent in the air than the carbonate, I think does not admit of a question. It is well known that the carbonate of the shops, or more correctly the hydrated sesquicarbonate, (consisting of three equivalents of acids, two of ammonia and two of water; and this is the form that it exists in guano,) by exposure to the air, or by careless keeping, becomes a bi-carbonate, (consisting of four equivalents of acid, two of ammonia, and two of water,) almost inodorous, and requiring eight times its weight of water to dissolve it.

But the advocates for mixing plaster with guano, in their sanguine efforts to fix the ammonia, seem only to have dreaded "aerial excursions," by the volatile salt, without once having their attention drawn to the greater danger of aquose voyages (if I may be allowed the expression) of the fixed salt.

But in the putrescent manures made on the farm, the ammonia is liable to be decomposed and disengaged by the heat caused during fermentation, and would finally make its escape in the air, if it were not by some acids having an affinity for it. And the most convenient as well as the cheapest for this purpose, is the sulphuric acid contained in plaster. The muriate acid of common salt would prove equally efficacious as a fixer, forming with it the muriatic of ammonia, called in commerce sal-ammoniac, which is quite as soluble as the sulphate, and can possess no advantages over it; and is therefore objectionable on the score of cost.

The manure pile being the prime source of agricultural success, no spare time should be unimproved in collecting materials for compost-heaps, such as woods mould, ditch bank, the mud thrown in piles the year previous out of old ditches, the scrapings from fence corners, the ashes from coal-kilns, &c.; and hauling them together in quantities sufficient to make a pile twelve feet wide, twenty-four feet long, and five feet high, with the addition of manure from the horse stables, cattle stalls, hog pens, &c. Experience at home and observation elsewhere, have fully satisfied me that such heating manures should never be spread immediately when taken from the stables, but always to be used for making compost-heaps. And if properly made, one load is worth more for any crop, will last longer, and secure a better stand of grass than the same quantity of raw stable manure.

A sufficient quantity of material being hauled together to form a heap—when the stables want cleaning out, the manure should be carried immediately to the pile and composted, by first laying down a layer of woods mould six inches thick, and covering this over with five or six bushels of charcoal dust, or double the quantity of ashes from coal-kilns; then a layer of stable or other rich manure, three or four inches thick, and sprinkle that with plaster till white. Commencing again with the wood mould, ditch bank, &c. mixed together, spread down another layer as before, six inches thick; throwing over it the charcoal dust—then the manure and plaster, continuing in the same manner until the pile is five feet high and about eight feet across on the top. We use about two bushels of plaster in a heap of the given size, and always finish the pile when commenced before quitting it, and sometimes make them smaller, being governed by the quantity of manure in the stables, and prefer to make the heaps in moist weather, as they are ready for use sooner than if made of dry materials.

In a month or six weeks, you will have a pile of fertilizing matter, equal in bulk to three times the amount of stable manure used to make it; and worth more than three times as much. When used, compost heaps should

always be cut down perpendicularly, in order to keep the manure well mixed.

Stable manure used in this way loses none of its ammonia. There is no smell about the pile, and when open for use it is perfectly sweet.

Another fruitful source of manure, if properly attended to, is about the kitchen and cabins. Keep woods mould hauled convenient to these places, and have the soapsuds, lye and other waste waters, the leached ashes, yard sweepings, scrapings from the wood pile, cleanings from the hen house, &c. &c. all thrown together upon it, with a few bushels of charcoal dust, and occasionally sprinkled with plaster and stirred over.

The quantity of manure made in this way, would surprise any one who has never tried it. It is the richest and most permanent manure that accumulates on the farm; and, withal, keeps such places clean and sweet, and obviates a noxious source of disease. It should, therefore, meet with the favorable attention of every one, as the means not only of increasing the products of their fields and gardens, but also as conducing in no small degree to the health of their families.

The wheat crop of late years is too precarious, to justify the farmer of limited means to make large investments in guano, especially at its present prices. And if he would avail himself of the means around him, and exert his energies a little in making manure, he will find the inducements to purchase it to grow less every year, will save his money for other useful purposes, and not lay himself liable to be imposed upon with an adulterated article, as the writer was last year in the purchase of a small lot of Peruvian guano, which was, as he verily believes, more than one-fourth common salt. I have learned that one of my neighbors was similarly imposed upon with the adulterated manure. JAS. A. REID.

Madison, February 5, 1852.

For the Southern Planter.

THE LIVINGSTON COUNTY PLOUGH.

Mr. Editor,—After some reflection on the subject I have come to the conclusion that the slowness of our progress has been, in a measure, caused by the partial view of the subject which many of our farmers take when starting out in the career of agricultural improvement. Caught by the novel theory of some misled enthusiast, or the well-puffed nostrum of some designing speculator in agricultural quackery, the young hand at the plough is apt to lose sight of those means and appliances, so necessary to success—and when convinced of the fallacy of the plan he has been pursuing, or of the undue importance he has attached to an article of only moderate intrinsic value, he becomes alive to the fact, that by patient industry, aided by an enlightened attention to the well-established improvements in *every department* of his business, success in agriculture only can be secured. Now it is, that he looks out for the best implements, as well as the best manures, and becomes satisfied that a *good plough* is not the least important of the many wants of a farmer disposed to do justice to his profession.

In undertaking to advise a fellow-traveller in the path of improvement, who has arrived at the point above indicated, as to the choice of *a plough*, I do not rely entirely on my own experience in the matter; but believe in the recommendation I shall make, I may, perhaps, Mr. Editor, have your own sanction, while, at the same time, many of the best farmers, both in Augusta and Albemarle, will coincide with me in saying that in all the combined requisites of a good implement, suited to *our labor* and our general wants, the *cast plough* known as the *Livingston County Plough*, is unsurpassed. As compared with the M'Cormick Plough, the best article in general use previous to the introduction of this cast plough, the saving in *cost* is fully *one-third*, if not more. It can be run at less expense, and it is the general impression, in my neighborhood, that there is a saving of one-third in horse-power. A consideration in this matter, which, in my opinion, should not be overlooked, is, that this is a *Virginia manufactured article*, and I think the enterprising gentleman, who, contending against great prejudice and difficulty, has succeeded in establishing on a large scale, in the county of Augusta, a furnace and factory for the construction of these ploughs, is justly entitled to the character of a public benefactor—whilst at the same time, I am happy to state, that unlike many other manufacturing enterprises in Virginia, this one has *paid well*, and the demand for this plough is large and increasing.

Whilst commending the plough manufactured at Mr. Bryant's establishment, I am not disposed to disparage others, made in this or other States. I have no doubt that many of them possess great merit; but the Livingston Plough, from the fact that it has not a *single screw* or particle of wrought iron about it (unless it be in the clevis;) combines a degree of simplicity and cheapness that I have never known in any other plough, foreign or domestic.

In this connexion, Mr. Editor, I cannot help being struck with the importance of the system of District Agricultural Societies, acting in conjunction with a General State Society, as recommended by the recent Agricultural Convention held in Richmond. The members would bring to the attention of the District Societies all new improvements of every description. Such as these Societies should think of sufficient importance would be carried up to the notice of the State Society, where, all deemed worthy of general adoption, might receive such notice and commendation, as would gain for them the confidence of the community.

Yours, respectfully, W.

PAYMENTS TO THE SOUTHERN PLANTER,

From March 1st to April 1st, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

Berthier Bott, to January, 1853, $1 00
Milton Garnett, to January, 1853, 1 00
John Stewart, to January, 1853, 3 00
Lady Cawthorn, to January, 1853, 1 00
Thomas Young, to January, 1853, 1 00
John Horsley's estate, to January, 1852, 2 00
Edmund Townes, to January, 1853, 1 00
Samuel Hancock, to January, 1853, 1 00
H. L. Reeve, to January, 1853, 1 00
John G. Jefferson, to January, 1853, 5 00
John N. Shields, to January, 1853, 1 00
A. H. Drewry, to January, 1853, 1 00
H. T. Drewry, to January, 1853, 1 00
Edward C. Robinson, to January, 1853, 1 00
D. M. Dunwoody, to January, 1854, 2 00
Col. R. F. Parker, to January, 1853, 1 00
J. M. Bennett, to January, 1853, 1 00
L. P. Ellis, to January, 1853, 1 00
J. Warwick Woods, to January, 1853, 1 00
Anderson White, to January, 1853, 1 00
James Massie, to September, 1852, 1 00
James Morriss, to September, 1852, 1 00
Dr. J. A. Michie, to July, 1852, 1 00
James T. Sutton, to January, 1853, 1 00
John Gilmer, to January, 1853, 1 00
James T. Dunkum, to January, 1853, 1 00
W. G. Overton, to January, 1853, 1 00
R. Lindsay Walker, to July, 1852, 1 00
Camm S. Garret, to January, 1853, 1 00
Lane Ashby, to January, 1853, 1 00
John Th. Smith, to January, 1853, 1 00
Col. Joseph Martin, to July, 1852, 1 00
George Rogers, to January, 1853, 2 00
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C. C. M'Intyre, to January, 1853, 1 00
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Edward Carter, to January, 1853, 1 00
Dr. P. Thornton, to January, 1854, 5 00
Wm. Johnston, to January, 1853, 1 00
Henry A. Sydnor, to January, 1853, 1 00
M'Laughlin & Carter, to January, 1853, 1 00
Thomas M. Arnest, to January, 1853, 2 00
Wm. P. Tucker, to January, 1853, 1 00
Rev. R. B. Moon, to January, 1853, 1 00
Rev. J. Tinsley, to January, 1853, 1 00
S. A. Ingram, to January, 1853, } 1 54
R. N. Neblett, to January, 1853, }
Edmunds Gee, to January, 1853,
Mr. Shackelford, to January, 1853,
James W. Hall, to January, 1853, } 5 00
Dr. R. Harrison, to January, 1853,
Wm. S. Burt, to January, 1853,
Silas Emory, to January, 1853,
Wm. Matthews, to January, 1853, 83
George C. Hannah, to January, 1853, 1 00
H. L. Plummer, to January, 1853, $1 00
George L. Aiken, to January, 1853, 3 00
John M. Scales, to January, 1853, 1 00
John A. Ratcliff, to January, 1853, 1 00
S. Golden, to January, 1853, 1 00
John Poe, to March, 1853, 1 00
T. Calbreth, to January, 1852, 1 00
Wm. H. Henning, to January, 1853, 1 00
Robert C. Davis, to January, 1853, 1 00
Thomas Wiley, to January, 1853, 4 00
R. A. Willis, to January, 1853, 1 00
B. Grant, to January, 1853, 1 00
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Dr. George Morton, to January, 1853, 1 00
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J. G. Fulton, to January, 1853,
Philip Airhart, to January, 1853,
O. Miller, to January, 1853,
Dr. Wm. B. Blair, to January, 1853,
David Landis, to January, 1853,
Jacob Sanger, to January, 1853, } 10 00
Richd. H. Dudley, to January, 1853,
Addison H. Coiner, to January, 1853,
Samuel Sanger, to January, 1853,
Thomas Reeves, to January, 1853,
A. Miller, (3 copies,) to Jan. 1853,
Felix Richards, to March, 1853, 1 00
Dr. Benj. Lewis, to January, 1853, 1 00
A. Cheatham, to July, 1852, 1 00
Capt. Thos. Bronaugh, to January, 1853, 1 00
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J. P. Taliaferro, to January, 1853, 1 00
George Taylor, to January, 1853, 1 00
H. G. Richardson, to July, 1852, 1 00
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Ben. E. Anderson, to January, 1853, 1 00
Joseph P. Terrill, to January, 1853, 1 00
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Vincent Phillips, to January, 1853, 1 00
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Col. R. Rowzie, to January, 1853, 1 00
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Dr. Joseph Flippo, to January, 1853, 1 00
D. D. Ferebee, to January, 1853, 1 00
Jas. D. Scarborough, to January, 1853, 1 00
C. L. Dicken, to January, 1853, 1 00
W. H. Roy, to January, 1851, 1 00
Dabney Minor, to September, 1852, 1 00

Henry E. Sipes, to January, 1853, $1 00
Thomas T. Munford, to January, 1853, 1 00
A. W. Nolting, to January, 1853, 1 00
T. I. Redmond, to March, 1853, 1 00
Daniel Jones, to January, 1853, 1 00
Capt. Arthur Slaughter, to Jan. 1853, 1 00
John E. Schley, to October, 1852, 1 00
Capt. David Pugh, to January, 1853, 1 00
Robert Carmichael, to January, 1853, 1 00
Col. Thos. Carshaden, to January, 1853, 1 00
Col. Charles Blue, to January, 1853, 1 00
James D. Watts, to January, 1852, 3 00
Austin H. Fergusson, to January, 1853, 4 00
Dr. N. T. Green, to January, 1853, 1 00
Col. Thos. Loyall, to January, 1853, 1 00
Col. J. Griggs, to January, 1853,
Wm. A. Sheffield, to January, 1853,
John T. Wootton, to January, 1853,
Maj. John L. Dillard, to Jan. 1853, 5 00
Capt. O. R. Dillard, to January, 1853,
Peter W. Watkins, to January, 1853,
Rev. S. J. Spotts, to January, 1853, 1 00
Luke P. Terpley, to Septepiber, 1853, 1 00
Dr. Josiah Lawrence, to July, 1853, 3 00
Dr. John E. Nicholson, to Jan. 1853, 1 00
W. S. Dulany, to January, 1852, 1 00
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J. B. Lightfoot, to January, 1852, 1 00
Henry Fitzhugh, to January, 1853, 2 00
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John R. Taylor, to January, 1853, 1 00
Ro. Garland, to January, 1853, 1 00
John R. Taylor, to January, 1853, 1 00
J. M. Bullock, to January, 1853, 1 00
J. Ferneyhough, to January, 1853, 1 00
Michael Wallace, to January, 1853, 1 00
Thos. W. Anderson, to January, 1853, 1 00
Z. C. Vaughan, to January, 1853,
Alexander Moseley, to January, 1853,
John W. A. Saunders, to Jan. 1853,
John Lackland, to January, 1853, 5 00
Benjamin A. Cox, to January, 1853,
James M. Johns, to January, 1853,
Melville M. Johns, to January, 1853,
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S. Crenshaw, to January, 1853,
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T. M. Gilliam, to January, 1853,
N. Cunningham, to January, 1853,
Wm. M. Womack, to January, 1853, 10 00
P. H. Jackson, to January, 1853,
Dr. W. T. Walker, to January, 1853,
Thomas Clarke, to January, 1853,
John Hughes, to January, 1853,
J. A. Watson, to January, 1853,
J. A. Dalby, to January, 1853,
W. C. Davis, to July, 1851, 2 00
R. H. Pollard, to January, 1853, 1 00
C. B. Foggs, to January, 1853, 1 00
Charles A. Scott, to July, 1852, 1 00
R. G. Grigg, to January, 1853, 1 00
John W. Broadnax, to January, 1853, 1 00
Wm. Turnbull, to January, 1853, 1 00
George B. Clark, to January, 1853, 1 00
Dr. Aaron B. Haskins, to January, 1853, 1 00
Robert Gibbony, to January, 1853, 1 00

B. R. Johnston, to January, 1853, $1 00
Wm. Munford, to January, 1853, 1 00
Mrs. Cynthia B. Boston, to Jan. 1853, 1 00
Frank: Fry, to January, 1853, 1 00
James T. Carter, to January, 1853, 1 00
F. M. Turbeville, to July, 1852, 6 00
E. G. Booth, to January, 1853, 1 00
Capt. R. H. Boston, to September, 1852, 1 00
Wm. A. Bragg, to January, 1853, 1 00
Benj. F. Watkins, to April, 1853, 1 00
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John T. Hairston, to January, 1853, 1 00
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J. J. Bowman, to July, 1851, 2 00
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Gen. S. A. Williams, to January, 1853, 1 00
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Dr. R. H. Nelson, to January, 1853, 1 00
James F. Huffman, to April, 1853, 1 00
Edmund T. Morris, to April, 1853, 1 00
O. B. Barksdale, to July, 1852, 1 00
Col. Wm. O. Harris, to January, 1853, 1 00
Dr. H. Curtis, to January, 1853, 1 00
Col. Edwin Shelton, to January, 1853, 1 00
John S. Mills, to January, 1853, 1 00
S. Coates, to April, 1853, 1 00
Mess. Jackson & Williamson, to Jan. '52, 1 00
A. Bailey, Jr. to January, 1852, 1 00
C. A. Anderson, to January, 1852, 1 00
Capt. D. E. Bailey, to January, 1852, 1 00
Col. Thomas Pugh, to January, 1852, 1 00
John A. Chappell, to April, 1853, 1 00
Dr. T. L. Walker, to July, 1853, 2 00
George W. Carter, to January, 1853, 1 00
Robert E. Dejarnette, to January, 1853, 1 00
Dr. Wm. S. Brockenbrough, to Jan. 1853, 1 00
Dr. G. Moseley, to January, 1853, 1 00
Dr. J. L. Burruss, to October, 1852, 1 00
Thomas W. Garrett, to January, 1853, 1 00
Temple Walker, to January, 1853, 1 00
Col. Thomas S. Jones, to January, 1853, 3 00
James Hodlett, Jr. to January, 1853, 1 00
James A. Smith, to January, 1853, 1 00
Leroy Campbell, to January, 1853, 2 00
Thos. M. Stubblefield, to January, 1853, 1 00
Dr. L. B. Price, to January, 1853, 7 00
Wm. J. Weir, to January, 1853, 1 00
Charles Smith, to January, 1852, 5 00
N. W. Burwell, to January, 1853, 2 00
James Dickerson, to January, 1853, 1 00
H. R. Woodhouse, to January, 1853, 1 00
T. R. Dunn, to January, 1853, 1 00
Dr. B. F. Taliaferro, to April, 1853, 1 00
Capt. R. M. Nimmo, to November, 1852, 2 00
A. White, to January, 1853, 1 00
J. H. Cook, to January, 1853, 1 00
R. H. Lipscomb, to January, 1853, 1 00
Jas. H. Johnson, to January, 1853, 1 00
Columbus Davis, to January, 1853, 1 00
Wm. S. Carter, to January, 1853, 1 00
Richard G. Bibb, to January, 1853, 1 00
Thos. Arvin, to January, 1853, 1 00
S. P. Hackett, to January, 1853, 1 00
S. G. Davis, to January, 1853, 1 00
Geo. P. Keesee, to January, 1853, 1 00
James Garland, to January, 1853, 1 00
Rev. O. Bulkley, to January, 1853, 1 00

LEWIS G. MORRIS' Third Annual Sale, by Auction, of Improved Breeds of Domestic Animals, will take place at Mount Fordham, Westchester County, (11 miles from City Hall, New York,) on Wednesday, June 9, 1852. JAMES M. MILLER, Auctioneer.

Application need not be made at private sale, as I decline in all cases, so as to make it an object for persons at a distance to attend. Sale positive to the highest bidder, without reserve.

Numbering about fifty head of Horned Stock, including a variety of ages and sex, consisting of Pure Bred Short Horns, Devons and Ayrshires; Southdown Buck Lambs, and a very few Ewes; Suffolk and Essex Swine. Catalogues, with full Pedigrees, &c. will be ready for delivery on the 1st of May—to be obtained from the subscriber, or at the offices of any of the principal Agricultural Journals or stores in the Union. This sale will offer the best opportunity to obtain very fine animals I ever have given, as I shall reduce my herd lower than ever before, contemplating a trip to Europe, to be absent a year, and shall not have another sale until 1854.

It will be seen by reference to the proceedings of our State Agricultural Society that I was the most successful exhibitor of Domestic Animals at the late State Fair.

I will also offer a new feature to American Breeders—one which works well in Europe, that is, *letting the services of male animals;* and will solicit propositions from such as see fit to try it.

Conditions.—The animal hired to be at the risk of the owner, unless by some positive neglect or carelessness of the hirer; the expense of transportation to and from to be borne jointly; the term of letting, to be one year or less, as parties agree; price to be adjusted by parties—to be paid in advance, when the Bull is taken away; circumstances would vary the price; animal to be kept in accordance with instructions of owner before taking him away.

I offer on the foregoing conditions three celebrated Prize Bulls "Major," a Devon, nine years old; "Lamartine," Short Horn, four years old; "Lord Eryholme," Short Horn, three years old. Pedigrees will be given in Catalogues.

At the time of my sale, (and I would not part with them before,) I shall have secured two or three yearly setts of their progeny; and as I shall send out in August next a new importation of male animals, I shall not want the services of either of these next year. I would not sell them, as I wish to keep control of their propagating qualities hereafter.

I also have one imported Buck, the prize winner at Rochester last fall, imported direct from the celebrated Jonas Webb; and also five yearling Bucks, winners also, bred by me, from Bucks and Ewes imported direct from the above celebrated breeder; they will be let on the same conditions as the Bulls, excepting that I will keep them until the party hiring wishes them, and they must be returned to me again on or about Christmas day. By this plan the party hiring gets rid of the risk and trouble of keeping a Buck the year round. All communications by mail must be pre-paid, and I will pre-pay the answers.

L. G. MORRIS.

Mount Fordham, March, 1852—3t.

LIVINGSTON COUNTY PLOUGH.

THE subscriber having greatly increased his facilities for manufacturing the above Ploughs, will be able to supply orders for Ploughs or Castings on a larger scale of the following numbers and sizes:

No. 1. One Horse Plough	Right Hand.
No. 2. Light 2 Horse Plough	Right Hand.
No. 2½. " " " "	Right Hand.
No. 3. Heavy " " "	Right Hand.
No. 4. Three Horse Plough	Right Hand.
No. 4. Heavy 2 Horse Plough	Left Hand.
No. 5. Three Horse Plough	Left Hand.
No. 6. Four Horse Plough; but generally used for 3 horses.	Left Hand.

These Ploughs are now displacing all others in many counties in Virginia. They are composed entirely of cast iron, with *chilled points*, &c. From the simplicity of their construction, and the ease with which they are kept in order, they are peculiarly adapted to lave labor.

Persons desirous of further information concerning these ploughs are referred to the following gentlemen, who now have them in use:
Wm. A. Woods, Esq. Charlotte County,
G. S. Harper, Esq. Appamattox County,
David Anderson, Jr. Louisa County,
F. G. Ruffin, Wm. Garth and P. H. Goodloe, Esqrs. Albemarle County, Virginia.

Persons disposed to deal in the *Livingston County Plough*, in neighborhoods where they are not already introduced, and on sale, will please address M. BRYAN,
Steel's Tavern, Augusta Co. Va

DAILY AND WEEKLY DISPATCH.

THE Daily and Weekly Dispatch, published at the office on Governor street, near Main, Richmond, Virginia—commenced in October, 1850—have reached a very astonishing popularity. The DAILY DISPATCH is a penny paper and has an immense circulation in Richmond and contiguous towns. It affords the best medium for advertising. Subscribers in the country furnished with the paper at the low price of Four Dollars per annum.

The WEEKLY DISPATCH is published at ONE DOLLAR PER ANNUM, and is therefore one of the cheapest Newspapers ever published. It is a handsome sheet and contains the News of the Day, together with Literary Selections from the very best sources. The list is already very large and constantly increasing. No paper will be sent until paid for in advance. HUGH R. PLEASANTS is the chief contributor to the editorial columns of the Daily and Weekly Dispatch. Address the Proprietor, Richmond, Virginia.

SANDY POINT FOR SALE AT AUCTION.

THE undersigned, prevented by engagements requiring his undivided attention elsewhere from residing on his farm, will sell publicly, unless previously sold privately, (and of which due notice will be given,) at the Bollingbrook Hotel, in Petersburg, on Wednesday, the 26th day of May next, at 11 o'clock, A. M. without reserve or regard to weather, that valuable, highly improved and heavily timbered estate, known as SANDY POINT, situated on James River, in the County of Charles City, Virginia, 45 miles below the City of Richmond, and 32 miles below the City of Petersburg.

This fine body of land contains 4,453 acres, and has been advantageously divided into four well located farms, with dwellings, commodious barns, &c. and into five valuable lots of timbered land, exclusive of an ample allotment of wood and timber for each farm.

Persons desirous of investing in lands of a quality not often in market, are invited to examine this estate.

Printed bills giving the qantities in the subdivisions, &c. will be furnished, and accurate plats exhibited to applicants.

Possession given of the timbered lands immediately after sale; of the farms, at the end of the year, with the privilege of fallowing and seeding wheat.

TERMS—One-fifth cash; balance in five annual instalments for the farms; for the timbered lands, one-third cash and three annual instalments; credit payments to bear interest, and to be secured by deeds and approved endorsed negotiable notes or bonds.

R. B. BOLLING.

Address to Petersburg, Va.

fe—tf PANNILL & SONS, *Aucts.*

AGRICULTURAL WAREHOUSE.

THE subscriber continues to manufacture Agricultural Machines and Implements, such as Horse Powers, Threshers or Drums, Fan Mills, different patterns; Seed Drills, different patterns; Corn Mills, Corn and Cob Crushers, Straw Cutters, Corn Shellers, a variety; Hill Side and Sub Soil Ploughs, Cultivators, Harrows, Grain Cradles, Reapers, &c. &c. all of which will be made in the best manner, and of approved patterns. My Horse Power and Drum, with self-oiling box, have been tested three seasons, and uniformly pronounced to be the best in use.

Machines repaired in the best manner.—Castings in Iron and Brass furnished at short notice.

H. BALDWIN,

ap—3t 148, Main street.

OSAGE ORANGE PLANTS FOR HEDGES.—A few thousand raised by myself, for sale.

WM. H. RICHARDSON.

Richmond, Jan. 1, 1852.—3t.

VALUABLE AGRICULTURAL WORKS for sale by NASH & WOODHOUSE, Eagle Square.

The Complete Farmer and Rural Economist and New American Gardener, by T. J. Fessenden, in one volume, about 700 pages, cloth, gilt—$1 25.

Johnston's Agricultural Chemistry—a new edition, in one volume, 12mo. cloth, gilt—$1 25.

Johnston's Elements of Agricultural Chemistry—50 cents.

Johnston's Practical Agriculture, one vol. cloth—75 cents.

Buist's Family Kitchen Gardener, cloth—75 cents.

Hoare's Treatise on the Cultivation of the Grape Vine on open Walls—50 cents.

Sheep Husbandry, by H. S. Randall—$1 25.

Stephens' Book of the Farm, complete—$4.

Browne's American Poultry Yard, tenth edition—$1.

Allen's American Farm Book, one volume—$1. Mail edition—75 cents.

Allen's Diseases of Domestic Animals, one volume—75 cents.

Chemistry Made Easy for Farmers, paper—25 cents.

Southern Agriculture; or, Essays on the Cultivation of Corn, Hemp, Tobacco, Wheat, &c.—$1.

Dana's Prize Essay on Manures—25 cents.

Miner's American Bee Keeper's Manual—$1. Mail edition—75 cents.

Brown's American Bird Fancier—50 cents. Mail edition—25 cents.

Canfield on the Breeds, Management, Structure and Diseases of Sheep—$1.

The American Architect, the cheapest and best work of the kind published in the world, complete in 24 numbers, at 25 cents each, or $5 for the work complete—$6 bound in two volumes.

Youatt and Martin's Treatise on Cattle, with one hundred illustrations, edited by Ambrose Stevens, Esq.—$1 25.

Youatt on the Breed and Management of Sheep, with illustrations—75 cents.

Elements of Agriculture, translated from the French, by F. G. Skinner, adapted for Schools—25 cents.

Gunn's Domestic Medicine; or, Poor Man's Friend in Affliction, Pain and Sickness—$3.

mar—1y

UNION AGRICULTURAL WAREHOUSE AND SEED STORE.

RALPH & Co. No. 23 Fulton street, New York, near Fulton Market, Dealers in all the most approved Agricultural and Horticultural Implements, Imported and American Field and Garden Seeds, Ornamental Shade and Fruit Trees, Guano, Bone Dust, Poudrette, &c. Wrought Iron Ploughs, Trucks, Barrows, &c. &c. always on hand. Also, the Excelsior, or California Plough. mar 3t

ANALYSIS OF SOILS, &c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va.

FRUIT AND ORNAMENTAL TREES AND SHRUBS.

THE Subscriber offers for sale a select assortment of Fruit and Ornamental Trees and Shrubs, a number of new Evergreens, and a good collection of Greenhouse Plants, especially of Camellias, Roses, Geraniums; also, Dahlia Roots, Pœonias, with Bulbous Roots, Garden and Flower Seeds, &c.

All orders thankfully received and promptly attended to. Prices moderate.

The subscriber is commencing a Nursery for the growth of Fruit and Ornamental Trees and Shrubs, in which the greatest care will be taken to grow only those fruits that are adapted to the climate; and all will be worked on seedling stocks. The subscriber has secured the services of an experienced Nurseryman, and thinks he will be able to supply those who may favor him with orders with good Plants at reasonable prices.

Catalogues will be published soon and can be had on application. Address

JOSEPH RENNIE, Richmond, Va.

COMMISSION HOUSE IN RICHMOND.

WITH the view of giving our friends and all others who may favor us with their patronage, the advantages of both markets, we have established in the City of Richmond a house for transacting a General Commission Business, to be conducted by TAZEWELL S. MORTON, under the style of TAZEWELL S. MORTON & Co.

The business of WATKINS & MORTON, will be conducted in Petersburg by SAMUEL V. WATKINS, assisted by JOHN A. MORTON, as heretofore.

It is our purpose to adhere strictly to the Commission Business; giving our undivided attention to the sale of the staple products of the country, viz: Tobacco, Wheat, Corn, Flour, Cotton, &c.

We return our thanks for the liberal patronage that has been bestowed on our concern in Petersburg, and to the dealers in produce and merchandise in that city we feel under many obligations for the generous liberality and punctuality we have at all times met with in our transactions with them.

TAZEWELL S. MORTON & CO.
Richmond, Va.
WATKINS & MORTON,
ja 3t *Petersburg, Va.*

TO AGRICULTURISTS.

MORRIS & BROTHER have received the following valuable Books, pertaining to Agriculture:

Elements of Scientific Agriculture, or the connexion between Science and the Art of Practical Farming. This was the prize essay of the New York State Agricultural Society; by J. P. Norton, M. A.

Elements of Agricultural Chemistry and Geology; by Jas. F. W. Johnston.

American Agriculturist, for the Farmer, Planter, Stock Breeder, and Horticulturist; by A. B. Allen; numerous plates. The 8th and 9th volumes of this most valuable work are received, also complete sets. Every farmer should have this work.

American Farm Book, on Soils, Manures, Drainings, Irrigation, Grasses, Grain, Roots, Fruit, Cotton, Tobacco, Sugarcane, Rice, and every staple product of the United States.—This is a perfect farmer's library, with upwards of 100 engravings; by R. L. Allen.

Farmer's Manual, with the most recent discoveries in Agricultural Chemistry; by F. Faulkner.

A Muck Manual for Farmers; by S. L. Dana.

Farmer's Land Measurer, with a set of useful Agricultural Tables; by Jas. Pedder.

American Husbandry.—Series of Essays on Agriculture, with additions; by Gaylord and Tucker.

Farmer's Encyclopædia; by Cuthbert W. Johnson.

Productive Farming, with the most recent discoveries of Liebig, Johnston, Davy, and others.

European Agriculture, from personal observation; by Henry Coleman. This is a very popular work.

Johnson's Chemistry and Geology, with their application.

Johnson's Dictionary of Gardening; by David Landreth.

Loudon's Gardening, for Ladies; by A. J. Downing.

Squarey's Agricultural Chemistry, Boussingault, Rural Economy, Buist's Kitchen Gardener, Landscape Gardening, and Rural Architecture; by A. J. Downing.

Fessenden's American Gardener.

American Fruit Book, with full instructions; by S. W. Cole.

Downing on Fruit Trees.

Theory of Horticulture; by Lindley.

Florist's Manual; by H. Bourne; 80 colored engravings.

Bridgman's Kitchen Gardener.

In addition to which, Morris & Brother have all of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—1y

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BOOKS, PIANOS, MUSIC, &c.

NASH & WOODHOUSE, Wholesale and Retail Dealers in Books, Piano Fortes, Stationery, Music, &c. 139, Main St. Richmond, Virginia.

Constantly on hand, a full supply of standard Agricultural Works.

oct—tf

WILLIAM P. LADD,

APOTHECARY AND DRUGGIST,

No. 319, head of Broad Street, Shockoe Hill, Richmond, Virginia.

DEALER in English, Mediterranean, India and all Foreign and Domestic Drugs and Medicines; also, Paints, Oils, Varnish, Dye Stuffs, Window Glass, Putty, &c. For sale on the most accommodating terms.

☞ Orders from Country Merchants and Physicians thankfully received and promptly attended to.

ja 1851—tf

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

STOCK Cattle of all the different breeds, Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged. Apply to

AARON CLEMENT, *Philadelphia.*

Refer to Gen. W. H. Richardson, Richmond, Virginia.

N. B.—All letters, post-paid, will be promptly attended to. ap—tf

GREAT REDUCTION IN PRICES OF HATS AND BOOTS.

J. H. ANTHONY'S FASHIONABLE HAT STORE, *Columbian Hotel Corner.*

THE cheapest place in the city of Richmond to buy Hats and Boots is at the above store, where every article sold may be relied on as represented. By this means he has gained a good run of custom, and his customers feel satisfied. Below is a list of his prices, which will be strictly adhered to:

Best quality moleskin, - -	$3 50
Second quality " - -	3 00
Best quality silk, - - -	2 50
Second " " - - -	2 00

Fine Calfskin Sewed Boots only three dollars and fifty cents.

Also, Caps, Shoes and Umbrellas.

J. H. Anthony has made an arrangement with one of the best makers in the city of Philadelphia, to supply him with a handsome and substantial Calfskin Sewed Boot, which he will sell at the unprecedented low price of three dollars and fifty cents. The attention of gentlemen is respectfully solicited, as they are the best and cheapest Boots that have ever been offered for sale in this city. He intends to keep but the one kind, and sell them at one price. se—1y

THE RICHMOND AND PETERSBURG RAIL ROAD COMPANY respectfully inform farmers living on the Roanoke River and on the line of the Raleigh and Gaston Rail Road, that they are transporting tobacco and other produce between Richmond and Petersburg with promptness and despatch, running daily trains of eight wheel covered cars, securing tobacco and goods from damage. Tobacco consigned to the care of J. Lynch, Rail Road Agent, Petersburg, will be forwarded, free of commissions, to Richmond. Goods purchased in Richmond and consigned to the Rail Road Agent at Gaston will be forwarded up the river without charge for forwarding.

THOS. DODAMEAD,
Sup't R. & P. R. R.

June 24, 1851—tf

VIRGINIA AXES.

THE undersigned, in connexion with their Rolling Mill, have erected an extensive Manufactory of Axes, Hatchets, and Tools generally, which they warrant equal to any manufactured, and offer at Northern prices. They solicit the patronage of the agricultural community.

R. Archer,
A. D. Townes,
R. S. Archer,
C. Dimmock.

R. ARCHER & CO.

oct—1y

BOOK AND JOB PRINTING executed at this Office with neatness and dispatch. Office South Twelfth Street.

THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, Editor. P. D. BERNARD, Proprietor.

Vol. XII. RICHMOND, MAY, 1852. No. 5.

For the Southern Planter.

VIRGINIA STATE AGRICULTURAL SOCIETY.

Report on Premiums adopted (with amendments) by the Executive Committee of the Virginia State Agricultural Society.

The sub-committee to whom was referred the subject of premiums, and the selection and designation of subjects thereof, in discharging the duty have kept strictly in view the resolution adopted by the Virginia State Agricultural Society, requiring that premiums shall be awarded only to subjects of utility to agricultural improvement and profit. In obedience to that rule, the following scheme has been devised, and the subjects divided under different heads or branches.

The number of subjects to be specified, and the value of the premium offered for each, ought to be in accordance with the amount of funds of the Society to be so used, and which amount for the current year cannot be known at this early time. Therefore, even if this general plan shall be approved by the executive committee, it will be proper for the present to limit the number of subjects for reward, perhaps to fewer than will now be suggested—and certainly to far short of the number that it is hoped may be rewarded hereafter.

For the like reason, it will be premature to name the precise money value of each premium. It is, therefore, proposed at present merely to designate the relative values of premiums by *grades*—from the first or highest grade, to the 6th and lowest; and the precise value of each to be affixed and made known hereafter, and before the time of the claims and awards being made. These grades may be proportioned to the following numbers: 1st grade as 20; 2nd 15; 3rd 10; 4th 5; 5th 2; 6th 1. When the precise value of the several grades shall have been determined, it is proposed that a portion of the premiums, of values suitable to the object, shall be paid in valuable agricultural books, well bound, and lettered appropriately for this purpose.

GENERAL SUBJECTS OF PREMIUMS.

1st Branch.—Experiments, agricultural or scientific, to ascertain the correctness or errors of agricultural practices, or of opinions or theory important to practice.

2nd Branch.—Essays, or other written communications, for the elucidation of either experimental, scientific, or other useful and practical subjects of agriculture.

3rd Branch.—For the best farming improvements and practice in Virginia.

4th Branch.—For the best crops, averaged to the acre, through the entire field (or the usual extent of such cultivation on a farm) and according to the established or designed rotation and system of culture.

5th Branch.—For the best specimens of live stock, for farming uses or profits.

6th Branch.—For the best agricultural machines and utensils.

7th Branch.—For the discovery or introduction of any new principle, process of agriculture, or other improvement by which important service has been rendered to the agricultural interests of Virginia.

8th Branch.—Special premiums for miscellaneous subjects of useful investigation, which may not belong to any of the foregoing heads.

9th Branch.—Premiums of not less than $20 value for each, may be offered through the Society, by, and at the expense of, any public-spirited individual, or association of individuals, who may desire thus to induce experiment or investigation on any particular subjects of inquiry, which shall come under the general design of the Society. In any such case, the premium shall be offered in and by the name of the individual donor, or association, but shall be awarded, as all other premiums, by the Executive Committee acting under the general instructions of the Society.

PARTICULAR SUBJECTS AND PREMIUMS.

BRANCH I.—*Experiments*—For each of the eight best experiments, or series of experiments on any of the following subjects, a premium of *first grade;*

1st. Effects (in profit or loss) of the usual mode of saving corn fodder, by stripping the green blades and cutting off the tops.

2d. Cost and effects of sub-soil ploughing, under different circumstances of soil and sub-soil.

3d. Action, or non-action, of lime as manure, above the falls of the tide-water rivers of Virginia, on different kinds of soil.

4th. Action, or non-action, of gypsum, below the falls of the tide-water rivers, and on soils respectively originally rich and originally poor; and on the latter, after as well as before their being made calcareous.

5th. Cost and effects of bone-dust, (or phosphate of lime) as manure; or of leached ashes.

6th. How late, in reference to the growth, the last tillage (by plough or cultivator) should be given to corn, for its best product.

7th. Benefits and products of guano, compared to costs; to be tested by not less than three different experiments, made under circumstances more or less different.

8th. Benefits or profit of preserving and applying human excrements as manure, whether prepared for sale and distant transportation or otherwise; but the whole operation to be in Virginia.

9th. Tide-marsh mud, or swamp muck, or peaty soil (either kind to be accurately described and characterized) as manure, in compost with lime or other materials, or otherwise.

10th. Value of charcoal as an aid to fertility.

11th. Value of sulphate of barytes as a manure, especially for clover.

12. *Tobacco.*—Culture, cost and profit of cultivation, and comparative effects on production, from different distances of planting—modes of priming and topping, &c. comprising at least three different experiments.

13th. Culture, cost and profit of cultivation, and comparative feeding value of rye.

BRANCH II.—*Essays or written Communications*—For each of the best five on any of the following subjects, a premium of *first grade:*

1st. On improving and enriching poor land—whether naturally poor, or naturally rich, or good, and subsequently exhausted by severe cropping.

2d. On draining.

3d. On rotation of crops.

4th. On the accumulation, preparation and application of stock-yard and stable manure.

5th. On the "green sand" or "gypseous earth" of lower Virginia as manure—and the facts, and causes of effect or non-effect.

6th. On the properties and value of the southern pea (or "corn-field pea" of any variety) and the culture thereof; whether for saving the peas ripened, or ploughing under the growth, green or dry, for manure, and as a preparation for wheat, or other grain crops.

7th. On the cultivation, curing, prizing and preparation of tobacco for market, a premium of *first grade.*

BRANCH III.—*Best Farming in Virginia*—having reference as much as may be to all the territory of the State. Honorary testimonials for the twelve best farms, which have been managed to greatest benefit and profit in reference to the following great objects of cultivation: improvement of soil, fertility, or production—increase of farming capital—sufficient annual profits—and general arrangement and procedure tending to best secure profitable and enduring results. Greater superiority in one or more of these requisites may compensate for deficiency in others.

BRANCH IV. For the best product, averaged to the acre, of each of the following crops raised in 1853 on a *bona fide* farm and for an entire shift of the farm according to its usual or designed rotation—a premium of first grade:

1. Best average product of Indian Corn,
2. " " Wheat,
3. " " Clover,
4. " " Tobacco;

and a premium of second grade for the best average product of each of the following crops:

5. Oats.

6. Peas (southern or cornfield either among corn or separate) in grain or in green manure.

7. Timothy or other artificial grass for hay.

BRANCH V.—*Live Stock Exhibited.*—(The grades and values of these premiums to be hereafter affixed and published,)

1st. For best stallion for breed of draught horses.

2d. For best mare for breed of draught horses.

3d. For best stallion for breed of light draught and saddle horses.

4th. For best mare for breed of light draught and saddle horses.

5th. For the best saddle horse.

6th. For the best pair of matched harness horses.

7th. For the best pair of mules reared in Virginia.

8th. For the best jack.

9th. For the best bull reared in Virginia.

10th. For the best cow reared in Virginia.

11th. For the best *imported* bull.

12th. For the best imported cow.

13th. For the best yoke of working oxen reared in Virginia.

14th. For the best ram of long wooled breed.

15th. For the best lot of ewes, not less than three, of long wooled breed.

16th. For the best middle wooled ram.

17th. For the best lot of ewes, not less than three, of same breed.

18th. For the best fine wooled ram.

19th. For the best lot of fine wooled ewes, not less than three.

20th. For the best boar.

21st. For the best sow.

BRANCH VI.—*Agricultural Machines and Implements Exhibited.*

1st. Best wheat reaping machine, a premium of second grade.

2d. Best drilling machine for wheat, a premium of second grade.

3d. Best corn sheller, a premium of third grade.

4th. Best three or four-horse plough, a premium of fourth grade.

5th. Best two-horse (mouldboard) plough, fourth grade.

6th. Best one-horse shovel, or other plough, without mould-board, for tillage of growing crops, a premium of fifth grade.

7th. Best cultivator, or other implement for similar operation, a premium of fifth grade.

8th. Best planter or drill for depositing seed of corn, &c., at regular distances, a premium of fourth grade.

9th. Best scythe and cradle, a premium of fourth grade.

10th. Best wheat fan, a premium of third grade.

11th. Best axe, a premium of fifth grade.

12th. Best grubbing hoe, a premium of fifth grade.

13th. Best portable wheat threshing machine, a premium of second grade.

14th. Best stationary (or immovable) threshing machine, not exhibited, but reported on evidence of sufficient trial, a premium of third grade.

15th. Best hay press, a premium of second grade.

16th. Best grain crusher, a premium of third grade.

17th. Best steam engine for agricultural purposes, a premium of second grade.

18th. Most extensive and valuable collection of useful machines and implements exhibited, and made at any one factory, whether including subjects for other premiums or not, a premium of second grade.

BRANCH VII.—*Honorary testimonials* to each individual of Virginia who, previous to 1852, has discovered or introduced or brought into use, any principle, process, or facility, or generally any improvement by which important value has been gained for the agricultural interests of Virginia.

Hereafter one such testimonial to be offered each year for the *best* service of this character rendered by any individual within the year preceding the award; or otherwise if older, not having been embraced in any former award because not earlier known.

BRANCH VIII.—Special premiums for any useful subjects not embraced under any of the foregoing heads:

1st. Discovery in Virginia of mineral phosphate of lime in sufficient quantity to be valuable for sale and distant transportation, as manure, a premium of first grade.

If more than one claimant, the most valuable discovery to have the award.

BRANCH VIIII.—Premiums to be proposed by and furnished hereafter by individuals (or associations) of not less than $20 value for each, will be announced in proper time.

GENERAL REMARKS ON, AND REGULATIONS FOR AWARDING PREMIUMS.

Special committees shall examine and report upon all subjects offered for premiums, and recommend to the Executive Committee the awards deemed proper—and these recommendations shall always be respected, unless deemed contrary to the general design and rules of adjudging merits and awarding premiums. The Executive Committee will confirm, or if required, correct such reports, and declare the final award and distribute the premiums or honorary testimonials.

Whenever the best subject for which is offered a premium has not merit or value to deserve such distinction, no premium shall be awarded in that case.

Except as to farms, crops and live stock, and new discoveries, &c., (branches 3d, 4th, 5th and 7th,) or other particular exceptions stated elsewhere, the competition for premiums is open to all residents of the United States.

Any animal, machine, or utensil, (branch 5th and 6th,) which shall have a premium awarded it once, as being the best of its kind exhibited, shall not thereby be debarred from claiming and obtaining the like distinction, so long as the particular subject shall be still deemed the best at subsequent exhibitions of the society. But in such cases, after two premiums in different years may have been awarded to the same subject, any subsequent honor to the same may be a testimonial only of its continued superiority. No other subjects except the last named shall obtain a premium more than once.

The kind of admissible testimony, cannot be prescribed in advance. The committees for examining claims for premiums must judge of the value of the testimony offered, as well as of the value of the claim in other respects.

As in regard to experiments, farming, crops, &c., no other witness is usually available, every claimant must testify in his own case, unless he has obtained and prefers to offer the testimony of others also.

REMARKS ON PARTICULAR SUBJECTS.

BRANCH I.—All *experiments* submitted for premiums, will be compared as to merit, whether they relate to one or to different subjects. The superiority of merit, or value of any experiment, or series of experiments, in comparison with others, will be decided in reference to the nearest approximation to all the following conditions: 1st. The comparative extent and completeness of the processes of experiment, and the apparent accuracy of the procedure; 2d. The clearness of the report.

BRANCH II.—*Essays*—The form and manner of each is left to the discretion of the writer. The award of superiority will be made in reference to the probable utility of each writing to agricultural interests, as well as to the ability of the treating of each subject. In matter designed to instruct, or to guide practical labors, clearness and fulness of details will be deemed a high claim to merit—and next conciseness. Nothing necessary for direction should be omitted—and nothing included that can be omitted without injury to the value of the instruction.

BRANCH III.—*Best Farms*—Competitors for these honors must furnish a sufficiently minute, yet concise general statement of the former and present condition and products, the mode of improvement and course of general management, so that the statement may be instructive to other farmers, who can avail themselves of the like means for improvement.

To no one farm shall this distinction be awarded more than once. In subsequent awards, the farms previously distinguished shall simply be omitted from consideration, and the award to be made to the best conducted of all other known farms, without its being designed by such award, to indicate that these later distinguished farms are either superior or inferior to any which had been honored in that manner at earlier times.

BRANCH IV.—*Heaviest average Product of Crops*—To compete for these premiums, it is required that the field producing the crop shall have been accurately measured (by survey) and the crop also, if of grain, by cubic contents, or otherwise. Crops of grass, &c., may be estimated by the actual weight of a small measured space of supposed average growth, such space being not less than one twenty-fifth part of the whole field.

The general measurement of the crop in preparation, manuring and tillage should be stated concisely in writing.

BRANCH V.—*Live Stock*—If a competitor claims any thing on the score of the breed of an animal, he must submit the pedigree in writing.

The committee will award the premiums to the animals supposed to be most valuable for farm purposes, and will at their discretion, estimate the value of the breed, as well as all other points constituting value. Unusually large and useless size, or extreme fatness, alone, will be deemed no merit. If there has been anything peculiar in the manner of feeding and other treatment of an animal, bearing on its value or profit, the facts should be submitted in writing. No unprofitable animal will be a proper subject for a premium.

BRANCH VI.—*Machines and Implements*—In judging of comparative merits, regard will be had not only to the effec-

tiveness and importance of the operation, but also the durability and the cost of the machine or utensil. The premium for any single machine or utensil should be due to the inventor or improver thereof, whose discovery has constituted the merit of the subject, and has gained the premium. If the merit is due to more than one discoverer, then instead of a premium, a testimonial of honor shall be given to them jointly.

For the Southern Planter.

FOUR ERAS OF AGRICULTURAL CONDITION,

IN A PARTICULAR LOCALITY.

Not long ago, the writer of the following remarks visited the neighborhood in which the earlier portion of his life had been passed, but from which his residence had long been removed. Upon this occasion, a somewhat protracted stay permitted his observations to be extended to scenes and objects with which he had formerly been familiar, but which had been out of sight for many years. The previous and accurate general reports, and the information thence inferred, did not prevent surprise, as well as high gratification to the writer, in the general exhibition of improvement of the lands, and of the thrift of the proprietors, of social benefits thence derived, and still more to be valued than mere wealth. But with these, there were also other and alarming indications of future evils, whose sources are hidden in the benefits now heedlessly and imprudently enjoyed. These views suggested the following remarks, of mixed approbation, censure, and solemn warning. They are designed to exhibit, in practical illustrations, certain agricultural causes and effects—and good practices held up for general applause and imitation, and of bad (though not generally so recognised,) for reprehension and avoidance. Still more particularly and especially does the writer hope that his statements and admonitions will serve, before too late, for the beneficial instruction of the residents of the neighborhood in question. He feels a deep and abiding solicitude for their general, and more especially in their agricultural success and welfare—for which feeling, the operating reasons will be sufficiently obvious to the community which will be the subject of these remarks. Therefore, the writer trusts that, in respect to his motives, he will be pardoned for sharply censuring what are deemed bad practices of his friends, or of the fathers or other near relatives of friends.

To avoid personalities as much as possible, no names will be here stated, and, indeed, no one individual will be referred to, separate from his class. And classes of individuals, and of habits, in former days, were so much alike throughout lower Virginia, that the general description may, perhaps, suit for many other localities besides the one in view. But while avoiding all reference to individual cases, the description and statements to be here given will be of actual occurrences, and correct in the general view, and also of particulars, so far as the writer believes. But in matters of detail, or as to exceptions, he may fall into some unimportant errors, owing to deficiency of recent personal observation, or to mistaken reports.

The neighborhood which will here be called M———, forms part of one of the tide-water counties of Virginia. On its river side, a narrow and irregular margin of naturally rich land permitted the existence of a number of large farms, productive at first, and of which the proprietors were rich, (for the time and locality,) or at least were in easy circumstances. The lands back from the river were much poorer. The larger proportion of the whole neighborhood, and even of the former best farms, was poor; and much of this proportion was even very poor land, still under its original forest growth, or a second growth of "old field pines" succeeding the exhaustion, and "turning out" of the land. But as the early practice was to clear and cultivate the best ground only, and as labor was then very cheap, and prices of crops generally high, almost every proprietor drew from his land a sufficient income, without much attention, or care for either the present or the future. The continuance of this general condition of cultivation, and the social habits thereby induced, will be distinguished as

THE FIRST ERA.

This state of (at least) pecuniary prosperity continued for the time succeeding the close of the war of the revolution, and its consequent enormous losses, and difficulties to land-holders, and the war of commercial losses and restrictions which preceded the actual hostilities with Great Britain in 1812. During the long inter-

mediate time, the general wars of Europe, and our own state of peace and free trade, and the foreign demand for, and very high prices of all our agricultural products, produced a long series of unequalled farming profits, so far as estimated by high prices of crops, and of annual incomes greater than before known. This rate of prices continued so long, that it was deemed the fixed condition of things, of which no termination was anticipated. Of course, habits of expenditure were fixed in accordance; and these, unfortunately, were much more enduring than the high prices and profits upon which the expenditures and other habits had been founded.

The first era was the flourishing time, in M———, as elsewhere, of "old Virginia hospitality," and all its good and evil consequences. No man of wealth, or with a moderate estate, thought of attending personally to his farming. Every detail of management was entrusted to the overseers, who rarely were stimulated by even the general superintendence and control of their employers. Overseers' wages were generally paid in a certain share or proportion of the crops they made. Thus, they had a direct interest in drawing from the land and labor as much as possible during the current year of their engagement; and none whatever in preserving or increasing the productive power of the land for later times. It came to be recognised as a maxim of agricultural morals, that "it was not *just* for a proprietor to interfere with and change his overseer's designed direction of the labors of the farm, inasmuch as any abstraction from immediate product, for the sake of future improvement, operated to lessen the overseer's profits for the present year." This doctrine accorded so well with the disposition of every indolent, careless, and wasteful proprietor, then it is no wonder that it came to be generally received, and conformed to in practice.

The more wealthy proprietors, having no occupation of industry, spent their time mostly in seeking pleasure. Visits to each other were frequent and protracted. It was rare that any one of this class was without some company, either at home or abroad. Besides such exercise of reciprocal hospitality, every idle or homeless "gentleman" of the whole country found in every mansion a comfortable sojourning place, and, at least the outward show, if not the reality, of welcome, so long as he might choose to stay. Of course, visits from such persons were ordinary occurrences—and were sometimes protracted for weeks or months. That this particular neighborhood was not "eaten out" by this class of genteel and honorable vagrants and spongers, was not because of their deficiency of numbers, or of active use of their facilities—but because they had the like privileges in every part of the country. This race, fortunately, is now nearly extinct. But many such individuals are still remembered, who for many years of their adult life, and some for their whole life, pursued no other business, and had no other means of support, except visiting their friends. Of course, they counted their friends by hundreds.

The wealthier proprietors in M——— were not only hospitable and kind hosts, but also refined and pleasing companions. Their fathers' wealth had served to give to them the education and manners of good society. With many excellent social and moral qualities, their habits of idleness and pleasure-seeking naturally led to the attendant and consequent vices. Social drinking was often carried to excess; and card-playing was sure to be introduced whenever as many neighbors dined together as served to make up a game of loo. Horse-racing was a favorite amusement of all classes; some of the farmers owned and ran race-horses, and nearly all reared horses of the high blood, and at the high cost, required for the turf, but which, in most cases, were subjected to the more humble and more useful services of the plough.

THE SECOND ERA.

It is not necessary to trace, with minuteness, the causes above stated, to their certain consequences—the full fruition of which distinguished the second agricultural era of M———. It is enough to say, that after more or less time, every farm was greatly impoverished—almost every estate was seriously impaired—and some were involved in debt to nearly their value. Most of the proprietors had died, leaving families in reduced circumstances, and in some cases in great straits. No farm, whether of a rich or a poor proprietor, had escaped great exhaustion; and no property great delapidation, unless because the proprietor had at first been too poor to join in the former expensive habits of his wealthier neighbors. The commencement of this time of retribution was before the war of 1812; and the prostration of

agricultural prices and profits which preceded and continued through that war, brought the former state of posperity entirely to a close. The second era—the time of privation, poverty, and almost of despair, for very many, continued in full force to about 1826 from agricultural causes—and still later (in common with the country at large,) for additional financial causes, resulting from the blunders of government in directing currency and banking—which, however heavily oppressing agricultural interests, were general, and require no more reference here.

Heavy as were the sufferings produced by the war, they served as a useful though stern school of discipline and reform for the previous wasteful and idle habits. These were abandoned, because it was impossible longer to indulge in them. There was nothing left to waste, but time and labor; and these continued to be wasted in the now fruitless efforts to cultivate to profit, or to replnce the fertility of soil which had been destroyed. Luxury and expense had been greatly lessened. But on that account the universal prostration was even the more apparent. Many mansions were falling into decay. Few received any but trivial and indispensable repairs. No new mansion was erected, and rarely any other farm building of value. There was still generally prevailing idleness among proprietors; and also an abandonment of hope, which made every one desirous to sell his land and move to the fertile and far west; and a general emigration and dispersion only was prevented by the impossibility of finding purchasers for the lands, even at half the then low estimate of market prices. No good school could be maintained in or even near to M———. For some fifteen or more years, including this whole era, there had been no regular public worship, or religious services on Sunday, and rarely at any irregular times. The people were too poor to pay the schoolmaster or the preacher.

THE THIRD ERA.

For some years before this state of prostration and lowest condition had ceased to be universal, and to give character to the community, there had begun to operate, in a few particular cases, the means for recovery, and of attaining future and general prosperity. But so far, these were but exceptions to the general condition of the lowest agricultural depression. The first dawn of profitable improvement of poor lands, and of crops, had been made evident to but a few farmers as yet. The improvement of land by marling had been begun in M———, and upon the comparatively small spaces, the earliest thus manured, the benefits promised much to the believers in this then novel mode of fertilization. Still, rapidly as these small spaces were enlarged and multiplied, and great as were the profits on these spaces obtained by the few marlers, the general disregard or unbelief of the value, prevented, for years, any extensive effect on agricultural interests in general, or even any manifest change in the general downward progress of M———. Perhaps, notwithstanding some few remarkable cases of exception, and of great improvement of particular farms, the general decline of agricultural profits and welfare continued to about 1826 or '7—when lands were generally most exhausted, and lowest priced, their products yielding least profit, and the proprietors in the lowest condition. Then the practice of marling became general. Necessity had forced the rising generation of proprietors to become economical and industrious; and the certain and rich rewards now, for the first time, offered for their labors for improvement, was a powerful additional incentive to industry and general good habits. The young proprietors who had recently reached manhood, and those who subsequently grew up under these new circumstances, were, almost without exception, industrious, steady, sober, and thrifty. It has since been as rare to find a farmer of M——— wanting in these qualities, as it would have been in the first era, to find one possessing all of them. In periods varying from ten to fifteen years, after beginning to marl, almost every proprietor had increased his crops to two or threefold the former amount. Of course, the nett profits and the intrinsic value of land are both increased by permanent improvement in much greater measure than that of the increased gross products. Good or improvable lands, and desirable possessions, have since been rarely sold, or offered for sale; and the actual prices of the land sold, (which never keep pace with the increase of productive value,) are much higher than formerly. Not a single case has occurred since marling was begun, of a resident, or proprietor, in M———, having moved to the west. The sons or grandsons of the men of the first era are,

for the most part, the present proprietors—in some cases by re-purchase. Most of them are now the fathers of either large or growing families; and poor as most of them began their labors, there is every prospect that all can give to their children more expensive educations and better properties, than they themselves received from their fathers, or their fathers' estates.

There is also most manifest and extensive improvement in the moral and social condition and habits of this community, which is mainly, if not entirely, due to the improvement of farming practices. The vices of intemperate drinking and gaming are extremely rare, and scarcely known in persons otherwise respectable. Wasteful expenditure is still more rare. Almost every man is thriving in his affairs. Almost every farmer, (according to the wants of his growing family,) has either thoroughly repaired or added to his mansion, or has built anew—or is now doing so. In this respect, there is presented to the eye a remarkable contrast to the general neglect and dilapidation of buildings some fifteen or twenty years ago.

Among the buildings completely repaired is the old church, which had been left for many years without use, and was then hastening to ruin. The services of public worship, have now been long performed there regularly. Amounts have been paid for such purposes, which are unusual for any country congregations. The ministerial services secured and now enjoyed are of very high order.

Two respectable schools are now sustained in M———; and they are as much required for the increased number of children, as by the increased pecuniary means, and more elevated views of the parents.

It might be inferred, if not explained, that the improvement of morals and of religious observances in M———, had been, as in numerous other cases, the results of religious influence operating in advance of other causes. Such was not the case. It is far from the design of the writer to depreciate, in the slightest degree, this most important of all means for extended moral reformation. But it is due to truth, in this case, to say that the economical and moral reformation of this neighborhood, and even its early liberal outlay for the services of religion, preceded the existence of any extended religious feeling or its influence. Indeed, in the early time of this third era, it was a remarkable fact, for a community in general so moral, that there were so few professors of religion. But latterly this state of things has been nearly reversed; and though religious feeling did not precede the recent and present reformation of business and social habits, it has followed that reformation, and to a remarkable extent.

THE FOURTH ERA—IN PROSPECT.

The state of prosperity and improvement, which has been described, has so far exhibited no general and obvious abatement; and but few cases of particular exceptions—of which the causes are as apparent as the effects. Few, if any of the residents have suspected, or will now admit, that in their present prosperity they are planting the seeds of future decline, and that, without a change of the general procedure, a fourth era will arrive, of decline of fertility, leading, if not properly counteracted, to final and remediless impoverishment of their lands. Should this warning (like many others preceding,) be neglected, and the contingent prediction be fulfilled, the cause will be the same that in England has long established and made current the common saying that "liming makes rich fathers, but poor sons." And this saying has been true there, and the same as to marling will be true here, in the greater number of cases; not, in the least, because of any fault or danger of the proper use of calcareous manures, but because of the heedlessness of those who use them improperly. The farmers of M———, like most others, while they have industriously applied marl, and profited well by its early returns, have not attended properly to sound views of its mode of action. They have been told, from the beginning, that lime (or marl) gave, directly, no aliment to crops, (or scarcely any,) and no new fertility to soil—but enabled plants to use all the previous (perhaps dormant) fertility of the soil, and enabled soil (if permitted to act) to gather, and store up, and fix new supplies of fertilizing matter. Nobody in M——— has denied this doctrine; but very few have obeyed its necessary deductions, that limed or marled land should be supplied, (or be permitted to supply itself by means of its own growth,) with organic or vegetable matter in full proportion to all that is drawn from it. If more is regularly taken off, in crops, that all the fertilizing principles restored from all sources, then the stock of fertility is in the course of being

consumed; even though the crops have not as yet been lessened in the least, or even may be still increasing. Marling has enabled the farmers of M——— to draw from the now utilized fertility of their before acid and inert soils, doubled, tripled, and in some cases quadrupled crops of grain. The lands can as well, or better, produce as much increased crops of grass, or other vegetable matter; one year's growth of which, if left on the land as manure, would re-place what had been drawn away by two grain crops removed; or would supply manure for as many thereafter. But this conservative process, which is the most profitable even for speedy returns, is rarely carried fully into effect. The contrary course is almost universally pursued, of drawing from the land, in each course of its rotation, more in crops removed, than can be compensated to the soil by the vegetable growth left to act as manure, or in other putrescent manure supplied. This procedure, though not so sudden in operation, is yet precisely in effect the "killing the goose that laid the golden eggs," for the purpose of getting all that the land can yield, as soon as possible. This is the course that nearly all the farmers of M——— are pursuing, to more or less extent, and without knowing it. There is not one of them who would, intentionally, impoverish his land. Every one would deem impoverishing culture as a loss, and even a disgrace to him. But he cannot be pursuaded that he has been so acting, and is continuing so to act, while his crops have not yet (manifestly) declined below their highest increased rates.

Should the fears here expressed be well-founded—should the farmers of M——— persist in taking more from their lands than they permit to be restored as resources for continued production, (or, as ought to be, for still increasing production)—then a decline is certain to begin, and to proceed, however slowly, to its fatal termination. The final result may be very long arriving. It will never occur to those who will receive and regard this warning. But to all who will not regard this or any such warning, there will certainly occur, at some future time, a state of poverty of their lands at least as great as formerly existed, and much more hopeless of remedy—because not again to be removed, but rather would be aggravated, by a repetition of the same cheap manure, which was formerly so efficacious for fertilizing.

May this warning not be uttered in vain!

CALX.

For the Southern Planter.

FENCING, &c.

Mr. Editor,—Your correspondent "M. C." in the January number of the Planter, makes some very interesting remarks on the subject of fencing, which he hopes may tend to lessen the "onerous" tax upon the farmers of Virginia, for, says he, "No man looks forward with any hope to any modification in the law of enclosures," and proceeds to show the great necessity of looking out for some cheaper plan of fencing than the present mode; we may derive much information from his observations and plans—they are good. But I must beg leave to differ with him in reference to a "hope," at least in the modification of the fence law, and in the same number of the Planter he may see that the "Farmer's Club of Nottoway county," not only entertain a hope, but under a consciousness of the justice of their cause are now petitioning the Legislature of Virginia for some change or modification in the law, and it is my deliberate opinion, and has been for years, that it is only necessary to persevere and agitate the subject until ample light is afforded, and the end desired will be accomplished. It is one of those subjects involving principles that will bear investigation. But very many of the farmers consider a fence as indispensable as ploughing their land, and hence never calculate how enormous the tax of fencing is and upon whom the heaviest burden falls, hence never think of relief, and the burden is daily increasing, which I think I can show. At no distant day we shall not hear with indifference the loud and just complaints of the farmers in lower Eastern Virginia, but a large majority of all classes east of the Blue Ridge will see the justice of uniting with their suffering brother farmers of the lower country, praying the Legislature to modify or repeal the fence law; and when it is felt and seen that general interest and justice both demand it, we have only to ask it and it will be done. Let me present, for the consideration of your readers, a few plain facts: Look at the vast improvements now going on in our section of country, the immense demand for lumber in our cities, towns and villages, and for plank and railroads, canals and bridges, and for farm buildings. The use of guano, plaster, lime, &c. bringing into cultivation many poor sections of land from which we have received large supplies of lumber, the rapid increase of our crops of wheat, already very large, constantly making heavy drafts upon all the best oak of all kinds, and chest-

nut for barrel timber, and a great amount of under growth destroyed by getting timber to steam saw mills, much cut for hoop and keg poles, and many of such are sent to the West Indies. Just below my residence, within twenty miles square, there are I think upwards of twenty steam saw mills in operation, cutting from two to five thousand feet of lumber per day, making an aggregate of not less than sixty thousand feet per day within that space, and they are being scattered in all the country east of the Blue Ridge, and many carried beyond it. Poor timber lands have increased in value within four years from one to three hundred per cent.; and such is the facility of transportation, that fire wood is an article of trade—and is in demand—and every tree that will make one hundred fence rails is worth from fifty cents to one dollar each. Now, are not these startling facts? Many inquiries are now being made by the thinking part of the community, what shall we do soon for building and rail timber and fire wood? I now propose to show that the heaviest proportion of the great expense of fencing falls on the poor man, or man in common circumstances, owning a small farm—and as timber rises in value it will become more burdensome.

Fencing 10 acres under the present system, ten rails to the panel, making 3,680 rails, hauling and putting up; worth $1 per hundred,	$36 80
37 trees to make them, worth 50 cents each,	18 50
	$55 30
Interest on this sum, 9 years the last of a fence,	29 86
	$85 16
Annual Tax of 10 acres, to say nothing of repairs, &c.	$9 46
Fencing 100 acres under same system, &c. making 11,200 rails, hauling and putting up, at $1 per hundred,	$112 00
112 trees to make them, worth 50 cents each,	56 00
	$168 00
Interest on this amount 9 years,	90 72
	$258 72
Annual Tax of 100 acres, saying nothing of repairs, &c.	$28 63

This is a fair calculation under the present system, showing most clearly that the man with a little farm of ten acres, pays a tax of about one-third as much as the man with one hundred acres. The former making, perhaps, twenty or thirty barrels of corn and the latter making two to three hundred, perhaps four hundred barrels—clearing land and cultivation cost the same per acre. Now, whose corn costs the most to make it? I think I have proved that a great disproportion of the enormous tax of fencing is upon the poor man, and when the time comes, and come it must, when with our friend "M. C." we have to resort to rock, ditching, wire and Osage Orange hedges, will it not bear still harder upon the poor man? Why will we not then take the advice of Solomon, "The prudent man foreseeth the evil and hideth himself," and learn to live under a modification of the fence law before a worse thing comes upon us. Once more let me try to make the matter more plain for those who may not desire to understand it. Let us suppose a case: Suppose the Legislature of Virginia was to repeal the fence law and agree to allow every farmer so much per head for keeping his cattle in an enclosure, say one dollar each; and to raise the money for this purpose, was to levy a tax upon every farmer *exactly* as they tax themselves in fencing.

Here is the statement:

The 10 acre farmer is taxed annually as above,	$9 46
Allowance made him for keeping, say 3 head of cattle, at $1 each,	3 46
A clear loss of this sum,	$6 46
The 100 acre farmer is taxed annually,	$28 63
Allowance made him for keeping 30 head of cattle—if the other keeps 3 he ought to keep 30, at $1,	30 00
A clear gain of this sum,	$1 37

I will now suggest a plan which, in my opinion, will in effect, in a considerable degree, act as a modification of the fence law: Let every farmer keep good gates, instead of drawbars and gaps, and keep his stock in proper bounds in winter, as well as summer; thereby preventing their stock from learning their powers and contracting mischievous habits; and at the same time pray the Legislature of Virginia to enact a law to prevent those very unruly and ungovernable animals, bulls and boars, from running at large. They soon learn their strength, and seldom turn to the right or left for any fence, prostrating the fences as they go at any season of the year, letting in other stock to *their* ruin and an immense destruction of crops, sometimes eating up the "ten acre field" in one night; and such events often cause strife and discord among neighbors—and such animals are dangerous in many instances, and at any rate are very alarming both in the country and in villages, and roaming as they do, farmers cannot expect to improve their stock, nor can they have their calves and pigs at a proper time, which often renders them valueless.

Yours, respectfully,

W. TIMBERLAKE.

Belle Air, March 2, 1852.

For the Southern Planter.

CULTIVATION OF CORN.

Mr. Editor,—From April till August last year we had a severe drought, relieved by a few light showers of rain; but I made an excellent crop of corn as to both quality and quantity. As a good crop was a rarity in this region, it is fair to infer that there was something worth telling in the preparation or cultivation, or in both. But of this you shall judge.

The scene of the crop is an old cornfield that has been in constant cultivation or pasturage for many years, without manure of any sort. About one-third of it is creek bottom. In December and January, the field was broken up to an average depth of nine or ten inches; but some of the hillsides, ploughed in large lands, were broken several inches deeper. In April, the field was dragged, and the highland furrowed for planting, by running large shovel ploughs horizontally, about four and a half feet apart. The bottoms, broken up in four rowed beds, were listed with four furrows by two-horse ploughs, and the lists were split with the shovels. The corn having been soaked in a solution of saltpetre, and then coated with tar and plaster, was dropped by a hand in the shovel furrows, at distances of from twenty-four to thirty inches on highland and eighteen inches on the bottoms, and was covered with seven-tooth harrows, without the front tooth. Soon after the corn came up, coulters were run twice in a row, next the corn, on the thinnest and stiffest portions of the high land; and seven-tooth harrows were run twice in these rows. In all other parts of the field, only the harrows were used. Hoes followed the harrows, merely skimming between the plants, and all the hoe work was completed in less than six days. One large hill was harrowed a second time, and another hillside, on which the rows were not more than three and a half feet wide, was worked finally with a one-horse cultivator. The other parts of the field, high and low, were laid by with one-horse dagons, throwing out the whole row.

The product of the field, considerably diminished by the bad "stand" on some of the richest spots, was greater than the best of two crops it had previously produced for me, by nearly one hundred barrels.

I omitted to state that the corn was thinned, as the hands went over the crop with the hoes, to one stalk on the high land and on the bottom, except some of the richest places of the latter, on which two stalks were left together.

The product was remarkable for the season, and has been attributed to other causes than the deep ploughing and the cultivation. But I am satisfied that it is due mainly to four things: 1st. The land was broken close and deep. 2d. The corn was planted thick. 3d. It was planted and covered very deep—at least four inches. 4th. The cultivation was shallow in comparison with the depth of the planting; and hence, while the surface was kept tolerably clean and loose, the roots were not much broken.

I intended to run the drags broadcast over the field, as soon as the corn was up; but the ever-pressing claims of the tobacco crop prevented. This was the more necessary, because a heavy fall of rain made a hard crust on the surface, and the dragging would have removed this crust.

How would it do, Mr. Editor, to plough in guano and plaster, or guano and charcoal, when we break land for corn? If we may plough in the guano at that time, without too great loss by evaporation, the time and labor of putting it in at planting time would be saved, and the reversing of the furrow slice would be avoided. Besides these advantages, it occurs to me that guano would act better on a summer crop if put into the earth in autumn or in winter; because there is always moisture enough then to dissolve the salts, and time enough, at the most favorable season, for the decompositions and combinations that chemists tell us take place when guano is mixed with the soil. If applied at planting time, the land must be re-ploughed, or the guano cannot be covered as deep as it ought to be; and then, if a dry season succeed, but little benefit will result to the crop.

Yours, repectfully,

T. T. T.

FOOT ROT.

This disease has been the dread and scourge of farmers everywhere, and has been the means of discouraging a great many from growing wool. It has also been the fruitful source of any quantity of quackery. We will engage to cure every sheep in the Union and warrant them for twenty-five cents per head. And we will tell all our readers how to do it without any humbuggery about it.

Take about four ounces of the *sulphate of copper*, or as it is known at the shops *blue vitriol*, dissolve in a quart of rain water. Cuttle your affected sheep, pare the hoof away from all the part affected; be sure of that, even if it takes it all off. Then apply the solution to every part of the foot, carefully and thoroughly. If well done, the cure is perfected. About a week after examine the foot, lest you may not have thoroughly pared off all the hoof from the affected part. The sheep ought to be kept in a dry pasture for a week or so after the application. If any subscriber wishes to go into the humbugging business, he can take the above solution, costing about six cents, put in a little wine and a little tobacco

juice, just enough to disguise the color of the liquor, look very wise and use some very long hard names, and he will find no difficulty in getting plenty of customers, especially among those who do not take the Wool Grower.—*Wool Grower.*

For the Southern Planter.

ON TILLAGE.

The origin of tillage is commensurate with the fall of man. When the Creator had rested from his labor, and pronounced it "good"—every thing, animate and inanimate, partook of the nature of the Great Architect, and was perfect. No desolating thunder-storm could wrest from man the bountiful supplies of a good providence; no parching drought could arrest promising crops, and deprive him of the staff of life; there was no frost to kill; no insects to destroy the natural productions so bountifully spread out for his use; all these things could make no alteration in the life of him to whom were given "every herb bearing seed, every beast of the field, every fish, fowl and living thing:" on the contrary, our progenitor's life might have been one of uninterrupted and unalloyed happiness; it was his to enjoy life without life's cares. On which ever side he turned himself, he beheld green trees and murmuring brooks; every leaf animated by the breezes springing up and cooled by four rivers, the waters of which glistened beneath the radiating sun, gladdened his eyes; a velvet carpet was at hand upon which to recline, when he had "freely eaten of the fruit of the garden;" and as even these were not enough, "to man was given a help-meet" to perfect his pleasures through life—and, *perhaps*, smooth the pillow of death. But, alas! man's greatest—best gift—brought desolation, woe and misery to him, and a fearful curse upon his posterity.

We have become tillers of the soil, and are living by the sweat of our brows; *now* is waging a fearful war between nature and art; briers, weeds and thistles are springing up to destroy the labor of man; and he is engaged in felling the forest to live out his days of labor. What a fearful doom, and still more fearful reward, we reap, if, instead of conquerors, we become the conquered! then man preys upon his fellow-man, and with accelerating speed, rushes down life's declivity, till death closes the fearful tragedy. Such are some of the evils of every day life brought upon us—and which all farmers have to encounter. It becomes us, then, as tillers of the soil and as a club, to enquire how we are to lessen those evils which must be encountered, and make the soil subservient to our wants.

Man robs the forest of nature's growth, and the earth of nature's manure; she, true to herself, attempts to resume her empire. The growth of centuries being destroyed by the fell swoop of the woodman's axe, nature, crippled in her energies, puts up annuals to war against those annuals planted by man to supply his wants. This strife is carried on from year to year, till nature despairing, almost gives up the contest. Art has triumphed for a season; but the arena upon which this long contest has been fought, presents a spectacle so naked as almost to be taken for a desert. But the triumph of man, like Adam's last gift, has become his ruin, and the earth has been robbed of its capacity to sustain the conqueror. Such then is the tendency of tillage.

How shall we avoid destroying the soil, and leave it as rich as we found it in the forest state; and how shall we improve its productive power, are questions of greatest importance, and demand our serious consideration. Many schemes have been resorted to, some plans successfully carried out, to effect these objects. The disappointments most generally to be met with, are to be attributed to the foulness of our lands after being improved or before becoming exhausted. Now, to get over this difficulty, the farmer must adopt modes of culture which will leave his fields clean, and still keep up the productive power of his land. The foreign practice (now being adopted to some extent in this country) seems to be this: to cultivate the fields for several years in succession for that purpose, when they are laid down to grass, and after the natural grasses have taken the place of artificial ones, so far as to render them unprofitable, the land is again broken up, and goes through the same course of treatment, with like good effects.

Why should not we follow this practice, though our crops (except the wheat crop) are essentially different? Suppose one of us possess an arable surface of one hundred acres, and manure annually ten acres. It takes no prophet's eye to foresee, that even with the use of lime, many long weary years will elapse before that land,

if very poor, will yield such abundant crops as to sustain us, much less remunerate us for our labor in a pecuniary point of view.

Suppose such land cultivated in three fields, thus: first year corn, second year wheat and clover sowed, third year rest; there will be in annual cultivation sixty-six and two-third acres and ten manured; taking ten years to go over the entire surface with putrescent manures. Before the manured parts again come into rotation, the field receiving the manure will be as poor as at first, save as the gradual enriching quality of the lime, combining with and "fixing" the manure and vegetable matter, will have a tendency to keep up improvement. Added to this, on all farms there are poor spots and galls, usually at a distance from the buildings where the manure is made, and, of course, requiring more labor to transport it; on large farms, sometimes a mile, perhaps more; on small ones as great in proportion to the available force on them. After such places on the farm, as those spoken of, have been enriched, then the farmer may adopt the course of culture alluded to in a former part of this essay, (which our bye laws require me to furnish,) by selecting a piece of land near his farm-pen, and as large as can be covered with his annual supply of manure. Let him lay off four such lots, one of which will be manured for, say, corn, to be followed by wheat, and laid down to grass, until two lots are in grass. Then cultivate the remaining lots in corn and wheat, manured, of course, every year until the grass begins to fail; then reverse the crops, putting corn and wheat on old grass lots, and grass on the others. But in our day, when guano can be had, no man can be excused, who, having rich fields, exhausts them, or poor fields, and *will not* improve them. Three fields, (two of which may be cultivated every year and guanoed, the third laid down to grass,) I have no doubt, may be enriched by pursuing this course; for two thirds, cultivated yearly, will receive this manure on one part (the third part in wheat) annually. When the grass fails on the other portion, take that field in hand, and lay down another to grass. The practical questions to be decided, are: will this concentrated manure pay a profit on the investment, and improve the land? The first has been answered by many witnesses and the extended use of guano, in the affirmative. Some, or all of you, may think it presumption in me to assert, that the application of guano *will* improve land; but I unhesitatingly assert, that no manure containing

Water, salts of ammonia and organic matter,	23.05
Sulphate of lime,	1.08
Common salt and phosphate soda,	30.03
Phosphate of lime and magnesia and carbonate of lime,	44.04
Being components of	100.00

grains, can benefit the growing crop so as in some instances to give an increase of three hundred per cent. in wheat, without leaving a residium in the land by way of improvement. These properties afford from eight to seventeen per cent. of ammonia by slow decomposition to the soil, upon the authority of Dr. Ure, quoted by Johnson, and not contradicted; and a greater amount by some other chemists. Upon his (Johnson's) authority, "the presence or evolution of ammonia in a soil, containing animal or vegetable matter in a decaying state, induces or disposes this matter to attract oxygen from the air more rapidly and abundantly. The result of this is, that organic acid compounds are formed—which combine with the ammonia—and form ammoniacal salts. On the decomposition of these salts, by lime or otherwise, the organic acids which are separated from them, are always more advanced towards that state in which they AGAIN become fit to act as food for plants."

No doubt the presence of caustic lime will cause too rapid decomposition, and, therefore, it would be prudent to apply guano to land which has been limed, after the land has been limed for a season or two. Guano, then, is a "*sine qua non*" long wanted, to give food to plants, and which can be applied in such manner as is most desirable, and to such crops as will best sustain the cost of application. Having answered, theoretically, the question of improvement, I will return to the cultivation of the soil. To those who may not be disposed to adopt a system such as I have laid down above, there remains one which some of you are now pursuing; I mean the scourging system of three grain crops in four years, commonly called "the four-shift system." Add to this system one other field, and lay that one down in grass to remain four years, to be at the expiration of that time changed and brought under your present system by laying another field in grass; you will then

have as perfect a system as I can think of, to combine profit with improvement. You will then have three-fifths of your land in grain, and the residue in grass. This will enable you to subdue your natural enemies, and improve your soil. By pursuing this system instead of the other, there will, in the cultivation of one hundred acres of land, be about six acres of land less in cultivation; or, in other words, by the five field system you will, in sixteen years, get one year's rest for your whole arable surface. But leave guano out of the five-field rotation, and I claim the preference for the first one detailed with guano. The one has been tried by many intelligent agriculturists who have succeeded; the other remains to be experimented on, and may succeed. But at all events, no harm will arise if tried on a small scale. Let others do as they will, so far as my means will admit, guano will form a basis of operations, leaving experience to decide as to the best mode to be pursued in overcoming the many difficulties of our common profession, and making nature a subservient handmaid in agricultural improvement.

CORIOLANUS RUSSELL.

NOTE.—Since writing the above, guano has been used to some extent. On a field of ten acres, one ton was applied to corn-land so poor that the Club will bear me out in the assertion, it would not have produced five bushels of wheat per acre. The yield was two hundred and twenty-one bushels; ten having been seeded. Cost of guano, $50; add for land in wheat, without guano, 50 bushels, $90.

Sale of wheat, 221 bushels, at 90 cts.,	$198 90
Off	90 00
Nett balance due guano,	$108 90

I have applied five tons to present crop of wheat, which shall be reported to the Club at the proper time. C. R.

For the Southern Planter.

FARMERS' CLUB OF NOTTOWAY.

Report of Experiments made to the Farmers' Club of Nottoway, No. 1, by Richard Irby—Subject: Specific Manures.

EXPERIMENT NO. I.

On two contiguous pieces of land, as nearly equal in texture and quality as could be found, I applied Peruvian Guano, at the rate of 250 pounds to the acre, costing on the ground $7 62, and Kettlewell's Renovator, made specifically for corn and grain, at a cost of $6 90 per acre. The drought was very severe on both pieces, but the guano had clearly the advantage, the dividing line being visible the whole year. The guano may have paid, but the renovator did not. Both, however, may benefit the wheat seeded on the land.

EXPERIMENT NO. II.

On a piece of low grounds, which has been manured repeatedly for tobacco, I applied on two contiguous beds guano at the rate of 200 pounds to the acre, costing $6 10, and bone-dust, dissolved in sulphuric acid, (biphosphate of lime,) recommended particularly for tobacco, at the rate of 600 pounds to the acre, costing $10 20. I could not perceive any difference in the effects of the two.

EXPERIMENT NO. III.

Professor J. Mapes recommended the following as a good manure for tobacco, which he said could be purchased in New York for $4 for the mixture for an acre. This compound was:

Bone-dust, dissolved in sulphuric acid,	37 lbs.
Carbonate of Potassa, dry,	50
" " Soda, "	8
" " Magnesia, "	40
" " Lime,	96
" " Common salt,	50
	281 lbs.

I broadcasted one-quarter of an acre with this, selecting rather the poorest part of a lot, previously manured. Instead of costing me $4 per acre, it cost in Petersburg at the rate of $20, and turned out to be no account at that.

Remarks.—I have thus given the results of these experiments, all of them proving unfavorable. From the quantities of artificial or specific manures now manufactured and sold, it seems that they must prove beneficial in some sections. As they are quite costly, they should be used in small quantities at first. But in order to be used understandingly, in my opinion, they should be used on soils that have been analyzed, or whose defects are known, because the ingredient applied may be already abundant, or the ingredient lacking may not be known without an analysis.

Report of W. R. Bland on Corn and Fodder.

On the 16th day of September, 1851, I selected eight contiguous rows of corn, of the same length, and as far as I could see, exactly alike in all respects. Two rows were cut off at the ground and stacked—two others were pulled to the top—two others left standing with all the fodder on the stalk till the usual time of gathering corn, and the remaining rows were pulled, and the tops cut in the usual way.

No. 1 made 4 bushels of ears, weighed on the 24th November, 55 pounds to the bushel of shelled corn.

No. 2 made 4¼ bushels of ears, weighed on the 24th November, 56 pounds to the bushel of shelled corn.

No. 3 made 6 bushels of ears, weighed on the 24th November, 54 pounds to the bushel of shelled corn.

No. 4. made 4½ bushels and a fraction of ears, weighed on the 24th November, 57 pounds to the bushel of shelled corn.

It is proper to state that about one-fourth of that lot cut off at the ground, was afterwards nearly destroyed by cattle, and is not embraced in the above statement. Giving credit to No. 1 for the accidental loss, it should be 5½ bushels of ears.

No. 2 gave 38 pounds of fodder; No. 4 gave 30½ pounds. The fodder from No. 1 was much better on the inside of the shocks than I expected, from the dryness of the season. It was in fact pretty fair. The fodder from No. 4 was, of course, dry and worthless.

On the 10th February, 1852, the corn from each weighed as follows:

No. 1, 58 pounds to the bushel.
No. 2, 57 " " " "
No. 3, 58 " " " "
No. 4, 56 " " " "

Reducing it to money, the lots will stand thus, viz:

No. 1, 5½ bushels of ears, at 40 cts., $2 13
No. 2, 4½ bushels at 40 cts., $1 80;
38 pounds of fodder, 38 cts., 2 18
No. 3, 6 bushels at 40 cts., 2 40
No 4, 4½ bushels at 40 cts., $1 80; 30½
pounds of fodder, 30½ cts., 2 10½

No. 1, 2½ bushels shelled corn, at 58 pounds, made 154 pounds.

No. 2, 2½ bushels shelled corn, at 57 pounds, made 128 pounds.

No. 3, 3 bushels shelled corn, at 58 pounds, made 174 pounds.

No. 4, 2½ bushels shelled corn, at 56 pounds, made 126 pounds.

The above experiment shows some strange results. I do not, and cannot believe, that corn can gain in weight by drying, and yet the foregoing would tend to show that it did. I can only say, that the weighing was carefully done each time, and the result noted immediately, and I suppose the increase is due to the fact that no steelyards, intended for weighing heavy weights, will give the true weight of small articles.

Respectfully submitted.

—

Report of William Irby on Curing Clover Hay.

I beg leave to report to the Club the following experiment in curing clover hay, on the plan recommended by Edmund Ruffin, Esq., which may be seen more at large in the 6th volume of the American Farmer, page 291.* I found it convenient, for reference, to condense his directions, and in that form I submit them. As it regards the suitable state or maturity of the clover for cutting, viz: When about one-fourth of the blooms become brown.

* Republished in Southern Planter, May number, 1851.

Time of day, to commence cutting, viz: From 9 to 11 o'clock, A. M., or when the dew has evaporated.

When to heap the hay, viz: After lying in swath in the sun from three to five hours. All the clover cut after 2 o'clock, P. M., should remain till after the dew is off the next morning.

When to commence cocking, viz: One or two hours after being heaped.

How to cock it, viz: By placing a parcel of clover around each stake. The bottom of the cocks not to be more than thirty or thirty-six inches in diameter, gradually enlarging, and then slightly tapering to the top. The largest part should not be more than forty-eight inches in diameter, and to be about seven feet high. The heaping may be done by a common rake, but the cocking should be done with a long handled pitch-fork, with which a heap should be taken up at a time, placed on the upper end of a stob, around which the cock is to be made, and pressed down to the foundation. The stobs should be six feet high, clear of knots, and sharpened at both ends. They should be pretty firmly secured in the ground by putting them in holes, made by a sharp tough piece of wood, driven with an axe, as the cocks are liable to be blown down by high winds.

When to house or stack, viz: From four to six days after the clover has been cocked, and the hay to be hauled while the dew is on it, or when it is somewhat soft from moisture. The cocks should be thrown down, so that the bottoms may be exposed to the sun a half hour or hour before they are hauled. If the hay is stacked, the top of the stacks should be made of straw, to prevent rain from penetrating.

By following these directions, I this year cured the nicest and best clover hay I have ever seen; the stalks and leaves of which, after being housed, were almost as green as when growing, and the blooms retained their color. I consider the above referred to communication, by Mr. Ruffin, the *most valuable to us* of any I have seen in that able periodical, The American Farmer. We need now trouble ourselves no more in trying to make meadows of herdsgrass and timothy on our flats, (which I have long since believed impracticable,) as it is much easier to have a good clover lot, and as easy to cure the hay, which is superior to any herdsgrass or timothy that may be raised with us.

Respectfully submitted.

A HINT TO BLACKSMITHS.—The cutting of bars of iron or pipes with the chisel is a laborious and tardy process. By the following mode the same end is attained more speedily, easily and neatly: Bring the iron to a white heat, and then fixing it in a vice, apply the common saw, which, without being turned in the edge, or injured in any respect, will divide it as easily as if it were a carrot!—*Am. Farmer.*

THE SOUTHERN PLANTER.

RICHMOND, MAY, 1852.

TERMS.

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Business letters will be directed as heretofore to "The Southern Planter," Richmond, Va.

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TIMELY WARNING.

All subscribers who do not order a discontinuance before the commencement of the new year or volume, will be considered as desiring a continuance of their papers, and charged accordingly.

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Over 1000 and not over 2000 miles, 5 cents.
Over 2000 and not over 4000 miles, 6¼ cents.
Over 4000 miles, 7½ cents.

A DOLLAR'S WORTH ABOUT HOGS.

We do not propose to write a long essay on swine. None would heed it and few would read it if we did; but that class of stock generally fare so badly in Eastern Virginia that we cannot withhold a few words in their behalf, not less in tenderness to the poor starvelings themselves than to the interests of their owners. As generally managed they are permitted to come whenever the boar and sow choose, and find a precarious subsistence until they are some two years old in old fields, woods, lanes and bare pastures. Then, about the first of November, they are put up in a lean condition to fatten! as it is called, in a close pen without shelter, litter or trough, and suffered to pick out the corn, their only food, and that given to them without any regularity, from among the dung, dirt and mire which they have accumulated in the pen. At or after Christmas they are killed, when half fat, weighing rarely more than one hundred and twenty pounds, and hardly ever to exceed one hundred and fifty pounds. This plan is all wrong, as is proved by the numbers of Western hogs that are annually driven to Eastern Virginia to be slaughtered. Its apologists say it gives the best family bacon. We don't believe it. As good bacon as we ever tasted is made all around us of hogs that at eighteen months old average from one hundred and sixty to one hundred and eighty pounds, which of course in a large killing gives many hogs that overgo two hundred pounds. But if it does make nice family bacon it certainly fails to make a sufficiency of sides and shoulders for our negroes, who don't often get nice family bacon, and don't want it.

Now for a way in which they may be managed without more trouble than the present plan. Let all your pigs be littered in March. What come in the fall eat as roasters, sell, kill, get rid of in some way. Let the sows with the March broods be well fed until the pigs are weaned, feed these well, but not heavily, until clover comes in, say by the middle of May. If you have no clover field, at least have a clover lot for your hogs—cut off the ends of their noses if you cannot get rid of the rooter any other way, and turn them in. They won't hurt it half as much as one would suppose, unless you graze it too close, and

won't hurt the land at all. Then fence off a part of your oat field into a lot for them and remove them from the clover into it as soon as the oats are fully in the milk state. They will eat them up clean. By this time they will be ready to glean your wheat fields. As soon as they have got through them, or before, if the weather is wet, or the wheat not out of the field, or it is otherwise unsuitable, begin to cut up green corn from the corn field, and feed with that, stalk and all, scattered on the ground, *just as much as they will eat.* This mode of feeding will begin commonly about the first of August, when the corn is in roasting ear; and just then is the very best time to commence fattening hogs. Do not be afraid of spoiling the corn, nor begrudge the hogs their fill. The part of the crop so used will pay better than any other, and we would always select the best parts of the field for the purpose, when convenient. It is necessary to have two lots for this purpose, one planted when the balance of the crop is planted somewhat thicker than common, and at the rate of an acre for thirty hogs, and another of the same size planted the first of June. As soon as the early lot is exhausted commence on the late one and feed upon it until frost. If you see the frost coming cut up your corn and shock it, aiming to keep it green as long as you can. When this food is exhausted put up your hogs in a pen, if you choose, but it is not at all necessary, keep them well supplied with clean litter, and remove it as often as necessary, give them a plenty of sweet, fresh water, running water, if you can get it, shelter them with a lean-to or some simple contrivance; feed them on the best you have, and kill them the very first *cool* (don't wait for *cold*) spell in November, some afternoon; hang them up all night to extract the animal heat, and cut out and pack next morning by breakfast. Thus you will have fattened your hogs in warm weather when it will cost about half as much as to feed them in cold weather.—You will have more meat with less labor, and can take some credit to yourself for good management and humane feelings.

Turnips, which are the cheapest, and other roots may do, for those who have the time to raise them, on a small scale, as an alterative, and an occasional change of diet, but they will not fatten, except they be given in large quantities; and to raise enough for a pen of twenty-five or thirty hogs will prove a losing business. We tried it for four years, and have spent on six acres of turnips in one year as much labor and manure as would have made a good crop of tobacco on the same land, and, though we exhausted the land, made no great shakes of a crop at that. We have fed turnips to beeves with very happy effect on the health, but not much improvement to the condition of the animals—a fatting bullock, besides hay at pleasure, will consume about two bushels of common turnips in a day, and gain from them about two ounces of fat! Recent experiments have proved that carrots, supposed to be the most nutritive root, will not give as much milk as good hay; and so of flesh, for it is known that milk and flesh are convertible terms. Therefore, we say again, beware of root crops except on a small scale, and merely as a means of occasionally changing the food of your hogs. A much more valuable thing is pumpkins, raised more easily and with less expense; if made in the corn field then with no expense—and lasting as long as your fattening season ought to last. But pumpkin seed are eminently diuretic, and particular care should be taken to divest each pumpkin of them: otherwise the hogs will not fatten.

In feeding the cornstalks be particular to spread them in a pen or in some spot so arranged as that cattle cannot get to them. For the hog chews the juicy stalk and spits out the fibre, which speedily dries; and many cattle from choice, and all from hunger, if the pasture is bare, will eat it; being indigestible it produces violent inflammation and death. This is the cause of the disease commonly known in many places as *mad itch*, and deemed incurable.

Here, then, is a simple and cheap prescription for making pork—clover, oats, wheat gleaning and green corn. We do not say that each of these varieties will be exactly ready when its predecessor is exhausted: variable seasons and other circumstances will modify this, of course; but so short an interval, if any, will elapse that the farmer can easily afford to keep his hogs from falling back until it is ready for them, by feeding corn or whatever else he may have.

Nor do we say that the present breeds of

swine will at once, without improvement, come to the knife the fall after the pigs are littered. But we assert that any attentive man, if he will not get improved stock elsewhere, *as he should*, may so improve his own hogs in four years, only taking care to avoid the fatal error of in-and-in breeding, as to make them weigh more at that age than they now do at two years old. If it is desired to have them larger they must be kept over the winter, and be allowed, in moderate weather, a good ear of corn apiece, and double that quantity in bad or very cold weather. So wintered, and summered a second time as above, every man may have a first rate pen of killing hogs that will pay for the labor invested quite as much as the average crops of the farm. We say nothing here of the manure that may be made in this way, nor of the security of fences, which are rarely broken through by well fed hogs: it is your hungry hog that is "rogueish." We wish to see the plan tried in its simplicity first, and then the incidental advantages may be discussed hereafter. We say nothing either of other kinds of food, as peas, for instance, which are said to make a first rate pasturage for hogs. We only speak of what we have known to be put in practice, and have partly practised ourselves, of what we can confidently recommend and *warrant*. In leaving this part of the subject we will observe that the most important part of it is the feeding on green corn, and if any part is to be neglected we beg that it may not be that. We have been requested once or twice to write on this subject, but we have deferred it until now, simply that men might not forget it. We speak of it now just in time. Let our readers see to it and rid themselves of the disgrace of buying pork, or bacon, for *it is* a disgrace to a farmer to do it. The assertion that it is cheaper to buy than to raise is only the excuse of indolence or ignorance. It is hardly ever cheap to buy any thing that you can raise.

There is another mode by which every man with a moderate family and a garden can raise one thousand pounds of pork a year, and not feel it. We always do it. It is to take four pigs and put them in a dry, clean, warm, sheltered, floored, littered pen, and feed them from the slops of the kitchen, the leaves and parings of vegetables, the refuse of the garden, *especially the stalks as the roasting ears are stripped from them*, such weeds and grass as negro children will be well employed in gathering, and a little corn, less than a barrel apiece. The manure from this pen, which is raked into a hole at its foot, the common sink of the establishment will pay for all they eat and all the trouble taken with them. Let this pork be the perquisite of the mistress.

If your hogs are lousy go to their rubbing places, or what is better, take a rough twelve foot house log to the feeding place, and keep it constantly smeared with tar. No spaniel ever loved water more than a lousy hog loves tar, and he applies it himself to the most infested spots on his body so effectually that the lice speedily disappear. We have seen ninety-five out of ninety-six hogs smear themselves with tar in less than thirty minutes after they had access to it. And not one had ever known its use before. And we have heard of other well attested cases of the same sort. It was the remedy of the late Daniel Scott of Albemarle, who knew more about all such things than any man we ever heard of. He was a natural born naturalist, and his life if it could be written would be an instructive one to the farmer.

We urge the above upon our subscribers. Let them try it. There is nothing difficult in any part of it. We hope they have found out by this time that we deal candidly with them, stating nothing as fact that we do not know to be fact. Let them, then, manifest towards us on this occasion "a little generous confidence."

THE FARMER'S JOURNAL.

We have received the first number of the above periodical, a monthly of 32 pages, just started in Bath, North Carolina, and edited by Dr. John W. Tompkins. We shall cheerfully put it upon our exchange list, and shall be glad to see it thrive. It is the only journal of the kind now in North Carolina—we believe the first that has been started there, and we think should be encouraged by the farmers of that State. We shall always be happy to have as many subscribers as we can get among them, and see no reason why they should not take our paper as well as their own, but if they will only take one then we say to them frankly that they should discontinue our paper

and take their own. We do not feel at all indebted to any Virginia farmer who patronizes a foreign journal to our exclusion, and we think it a bad rule that don't work both ways.

As a sincere well-wisher to the Editor we hope he will excuse us for giving him one piece of advice. He speaks of having selected Professor Mapes as his "leader" and "guide." Now, were we in his place, we would have no leader and guide, but would select from all equally with reference to their merits. For one we do not agree to the correctness of all "the principles of improved farming set forth and advocated by" Professor Mapes, and hold that some of his doctrines, even if true, are entirely impracticable to the North Carolina and Virginia farmer; and we would not give a fig for any analysis of a soil that we have yet heard of his having made, as a *correct* SCIENTIFIC analysis, or one which can give the farmer a true idea of the constituents or wants of his soil.

ANSWERS TO CORRESPONDENTS.

"Enquirer," from Bell's Cross Roads, is informed that his excellent suggestion has been fully attended to, and it is hoped we shall shortly have some report on the subject from a very competent hand.

NEW BOOKS.

Our friends, the booksellers, have latterly presented us quite a variety of books. To C. M. Saxton, the agricultural book publisher of New York, we are indebted for the American Muck Book, by D. I. Browne, the author of several other rural and agricultural works. It treats of manures and fertilizers in general, with directions for preparing, preserving and applying them to the soil and crops as combined with the leading principles of practical and scientific agriculture—price one dollar; also, for a copy of the American Poultry Yard, by the same author, comprising the origin, history and description of the different breeds of domestic poultry, &c. with complete directions for their breeding, crossing, rearing, fattening and preparation for market, illustrated with numerous engravings—price one dollar; also for a copy of the Cottage and Farm Bee-Keeper—price fifty cents—a very pleasant, well written and instructive little work. We confess to a feeling of disappointment at reading the other two. We will not say they are not worth the money asked for them, for we know few books that are not, and we would not discourage a man from reading any book rather than none at all, but it strikes us that Mr. D. I. Browne is a mere book-maker—a very industrious, and perhaps, useful person, but not a man to write standard works.

We have received from Messrs. Nash & Woodhouse "The American Rose Culturist," a practical treatise on the propagation, cultivation and management of the rose in all seasons, &c. &c. by Saxton—price thirty-eight cents. Also from the same, by the same publisher, "The Hive and the Honey Bee," being an account of the diseases of bees and their remedies, by H. D. Richardson, one of the series of Saxton's Rural Hand Books—price twenty-five cents. We are not good judges of roses or bees, but these books are cheap enough we should think. They ought to be worth their price if they are worth anything.

Mr. A. Morris has sent us the above treatise of Richardson on Bees and Allen's Rural Architecture, being, in the language of its title page, "a complete description of farm-houses, cottages and out-buildings" of all sorts, together with lawn, pleasure grounds and parks—price one dollar and twenty-five cents. This seems to be a tolerable book and to one about to build worth the money. And, lastly, our friend, J. W. Randolph, has sent us the Walks and Talks of an American Farmer in England—price twenty-five cents; about a fair price; two of Saxton's Rural Hand Books, the Horse and the Hog—price twenty-five cents each; and a little tract entitled "Chemistry Made Easy," which might just as well have been entitled the impossible made attainable. We know just enough of chemistry to be certain that it cannot be "*made* easy" or learned in a duodecimo of ninety-five pages, and though such duodecimo may be useful and instructive it cannot do what it professes. The other two works possess no particular merit. But if a man wishes to spend twenty-five cents he may as well do it on one or the other of them.

This finishes the list, and we are bound to

say we do not think much of any of the series except the Cottage and Farm Bee-Keeper.—That we like. It is with books many a time as with horses. It is not every man who can tell a good horse when he sees, but there *are* some horses which the veriest cockney will pronounce upon with confidence—and be right. A certain symmetry and proportion of parts stamp his excellence beyond dispute. On this principle we pronounce the above little book worth having. The rest strike us as rather trashy, though they ought to be worth their price. If they are the best of their kind that can be had, then they ought to be bought, if they will outsell standard works then the booksellers and publishers are right to vend them. We hold the farmers, and not them responsible for the prevalence of such a fungous agricultural literature—and it is not to injure but to benefit their trade that we decline to recommend the compilations of book-makers. We are a friend to book-farming, but not to works which cannot elevate the character of farming books. Such works as Youatt on the Horse, but only the English or Skinner's edition, *by no means any other;* Youatt on Cattle, on Sheep, the farmer's series of the Library of Useful Knowledge, Low's Elements of Practical Agriculture, Von Thaer, Stephen's Farmers' Guide, London's Encyclopedia of Agriculture, Johnson's Agricultural Chemistry, Boussingault's Rural Economy, the most trustworthy treatise on agricultural chemistry we have yet seen, and the ablest, though not the most complete; Norton's Elements, Taylor's Arator, the series of The Farmer's Register, and *the old* American Farmer, and Buel's Cultivator, Buist's Kitchen Gardener, Cobbett.—Such works as any of these, and we could name more like them, we would delight to praise, and we will aid the booksellers by every means in our power to place a copy of each in the hands of every reading and reflecting farmer in Virginia.—We know them, we have read them, and always with pleasure and profit. But we hope they will excuse us if we decline to aid actively in the circulation of such works as they have sent us. If our judgment is worth anything to them it must be a discriminating judgment, or it soon loses its weight with the buyers. We want them to have the benefit of it, and think it will be more effectually secured to them by our praising only what possesses a more than ordinary degree of merit, and rises somewhat above the level of "very little books for very little children."

ERRATUM.

At page 111, April number of the Planter, at the conclusion of Messrs. Garth and Noland's Essay, read, and if the crop be allowed to hang in the house until warm weather, the firing must be *renewed* to prevent mould.

For the Southern Planter.

TOBACCO.

Mr. Editor,—In a hurried conversation with Colonel Bondurant last fall, in Charlottesville, I stated that I had raised tobacco on very thin land without the aid of any other manure than guano and plaster. Now, although I think it it more than probable that the conversation has passed from his mind entirely, still justice to him, as well as myself, requires that I should state the experiments exactly as they were made: In 1850, after preparing the land as usual with the plough and harrow, about three hundred pounds of guano and one hundred and fifty pounds of *plaster* were sowed on an acre, and then hilled with the plough: a *portion* of this land had a dressing of straw and chaff, which aided the crop of tobacco very much; also, the crop of wheat,* and is very visible now in the crop of clover, being fully equal to that on similar land, manured with forty loads of stable manure to the acre, but no guano. In 1851 the same experiment was tried, and up to this time promises a similar result, the land being now in wheat. A portion of this crop of tobacco, manured with

*The crop of wheat on all this land was very fine, (except the portion destroyed by the joint worm,) and the result may be *safely* estimated in the following manner:

Crop tobacco, 1000 pounds per acre, at 9 cents,	90 00
Crop wheat, 20 bushels per acre, at 60 cents,	12 00
	102 00
Cost of guano,	9 00
	$93 00

from which must be deducted the usual charges of cultivation, getting to market, &c. to obtain the nett profit of the operation.

straw, guano and plaster, was immediately adjoining a lot that was thought to be sufficiently rich without any aid, it being the yard and garden of an old settlement, and *very rich;* when compared with the adjacent land, the result in tobacco much in favor of the guano portion. I also in 1850 sowed about four hundred pounds per acre on a small portion of the crop of tobacco, and some plaster; this, though not too much for the tobacco, I thought rather too heavy a dose for the succeeding crop of wheat; some of it lodging, notwithstanding the fine season, and leaving a very indifferent *stand* of clover.

THOS. GARLAND.

EXTRACT FROM CORRESPONDENCE.

"*Mr. Editor,*—I will give you a small notion of mine, which may be of service to young farmers. It is my method of carrying clover-seed to and in the field at the time of sowing. I use a small one-horse wagon, with what is called a sand body, made perfectly tight; in this body the seed is mixed with plaster and leached ashes: (say two bushels of seed, two of plaster, and six of ashes) the moisture of the ashes as taken up from the heaps is about sufficient to make the whole mix well, and prevents the flying of the fine particles of the plaster, which is annoying to the hands employed in sowing. This quantity I sow on sixteen acres, as nigh as I can. This little wagon, drawn by one horse, follows the sowers through the field, and is always at hand, saving the loss of time occasioned by walking to and from barrels or boxes at stationary points. I always sow when the land is dry and when the impression of the wheels do no injury. The seedsmen go abreast, and the wagon going on the outside, (or on the land not sown) indicates by its tracks a line by which they are guided.

"Passing along the road to Charlottesville, a few days since, I saw in the field of one of our most distinguished farmers three rollers, each drawn by a yoke of oxen. I had not supposed that any farmer, who had ever seen a good mule, would use the ox for such an operation. I use the roller drawn by four sprightly mules, and with one driver they will pass over a larger surface in a day than the three yoke of oxen, with a driver to each, will in three.

"It was my misfortune, Mr. Editor, not to attend the meeting for the organization of the Agricultural Society for the State. Some of my neighbors, however, were there, and came back fired with new born zeal in agriculture. I think the ball is in motion. Let us unite head, heart and hand and keep it going.

F. K. NELSON."

For the Southern Planter.

At a meeting of the Hole and Corner Club, No. 1, Prince George county, held on the fourth Thursday in February, was read an answer of the Editor of the Planter to a communication from the Secretary of the Club, in which he desired the Club to send from time to time any essay or other matter we might think fit. The Club resolved itself into four committees to select from our journal every month some article for the Planter. The enclosed we have selected for March, which is at your disposal.

Respectfully,

P. P. BATTE,
J. M. JORDAN, } *Committee.*
CHR. FRIEND,

BEST MODE OF CULTIVATING THE CORN CROP.

The Committee on the subject of the "Best Mode of Cultivating the Corn Crop," beg leave to report as follows:

It would be supposed that, at this period, the best mode of cultivating corn, our great staple, would be perfectly understood, and its culture during each stage of its growth, from planting to maturity, reduced to a fixed and acknowledged system. But such is far from being the case; great discrepancy of opinion exists, and it is rare to find in a neighborhood any two farmers agreeing, either in their manner of cultivating the corn crop, or in the particular variety of corn that they cultivate. The different methods of corn-making being as various as the soils and situations on which it is made. We are far from thinking that this diversity of opinion is the result of ignorance or empiricism, the subject as yet being but imperfectly understood. As a conclusive proof to the contrary, it will be found that good crops are made under most of the different systems of cultivation, and "cæteris paribus" very near as much under one as under another. Different soils require different treatment, and the skilful and judicious farmer, who is wedded to no particular system, will vary his mode of cultivation to suit the different kinds of soil in the several *cuts* in his field, or perhaps in the same *cut*. In agriculture, as in the other arts and sciences, there are certain general and first principles, which, when kept steadily in view, will surely lead to a happy result. Acting on these principles, though the means differ, being modified by circumstances and situations, the result arrived at is the same.

As far as your committee can lay down rules to direct in a matter where so many circumstances, and even the difference in the seasons require such frequent departures from them, they will do so to the best of their ability.

1st. The quality of the land must be considered. That must be good, or if not, it must be rendered so by manures. The skill of the farmer may, indeed, carry the plant through

the different stages of its growth on an impoverished soil, but how different is the miserable, sickly, abortion of a crop in appearance from the tall, luxuriant growth of the kinder soil; and how different the product, the empty corn houses will but too plainly declare. The ways of applying manure are various. The land may be *top*-dressed with it at any time to advantage, or it may be spread upon the land just previous to ploughing, or after it is ploughed, for corn.' Thereby enabling us to be at all times engaged in using that important auxiliary. As regards the quality of the manure, the well rotted is to be preferred to the coarse and unfermented manures, the good effects of which are not only not so apparent, but it frequently proves injurious, by checking the growth of the plant, and causing it to *fire*.

2d. The land must be well drained where it is required; excess of moisture being inimical to all vegetation except the coarse grasses and weeds.

3d. The land must be well ploughed. As regards the best *time* and *mode* of performing that operation, the received opinion is, that the ground should be broken up in the fall and winter. Your committee have not sufficient experience to speak decidedly on that subject, never having been able to effect fall ploughing to any considerable extent. Some doubt exists as to the propriety of it—the alternate action of the frost and sun injuring by evaporation the fertility of the exposed soil. If there is a heavy cover upon the land, it should be ploughed in autumn; nothing but that, or close grazing, will prevent the destructive ravages of the cut-worm and other insects. When ploughed in the fall or early winter, the land should be re-ploughed before planted, and harrowed if necessary. As soon as the extreme rigor of the winter is over, the plough should be started. The land then is mellow and spongy from the action of the frosts and snows upon it, thus enabling us to plough deeply and effectually. Caution is necessary that it be not ploughed too wet; if that should happen, the bad effects will be apparent during the whole season. The ploughing should never be delayed until late in the spring, for after the grass has grown, and the sod covers the land, it is vain to expect a good crop from it.

Our opinion is, that the best mode of ploughing is to throw the land up into beds four feet, or four and a half feet, apart. The beds to be commenced with a three furrowed list, by which means the bed is thoroughly broken up and pulverized. In starting the bed with a two furrowed list, there is too much hard ground covered up, so that when the bed is split for planting, the hard unbroken sod is exposed.

4th. *The Time and Manner of Planting.*—We should commence planting corn about the first of April on the light lands, as at that time they begin to feel the genial influence of the sun. With regard to the manner of planting, we think it better to drill than to cross-plough or check; though much less hoe work is required when the latter method is pursued. Cross-ploughing should never be done on land liable to the overflowing of water. For planting, the beds should be split not shallow, nor too deep. The corn should be dropped in the drills at a distance varying from two to three feet apart, according to the strength of the land. The most expeditious way of covering the corn is by means of a light harrow, when the land is not too rough.

5th. The next operation to be considered, is weeding. This is accomplished by various means, all tending, with greater or less effect, to the same end. The loosening of the soil near the young plants, that their roots may spread in search of food, and the removal of the grass and weeds, that the warmth of the sun and air may not be excluded from them. For this purpose the harrow is used very successfully by some—it is, no doubt, very well suited to the light, loamy soils. Others recommend the cultivator—others again the plough. Your committee, as far as their experience goes, decidedly prefer the double shovel-plough to all other implements on most lands. It loosens the earth to a great depth, without throwing down the bed, or bringing to the surface the decomposing vegetable matter that has been turned in by the plough. It can be used with as much accuracy in running next to the corn as the plough, leaving very little work for the hoes. The hoes should follow in all cases, leveling the earth about the plants, (not hilling them up,) and weeding in the *step*. There are some lands on which none of these lighter implements can be used, on account of their extreme roughness, or from their being a great growth of grass and weeds—in such places the plough alone can be used with advantage. The corn, in such situations, should be *sided* with the plough, as close as possible on both sides. On wet, low land, the earth ought to be immediately thrown back to it, to preserve the height of the beds, and the hoes should follow, weeding and leveling the earth about the corn.

6th. The next process is ploughing the corn, or, as it is commonly called, "throwing the dirt to it." This we deem the most important of all the different operations. It is this working that stimulates the corn to a vigorous growth. The best mode of ploughing corn on stiff land, liable to be affected by water, is to run the first furrow not very deep, but the second, and those necessary to break out the middles, as deep as possible, thereby pulverizing the earth more effectually, and placing the young corn out of the reach of water. Light and dry lands should not be ploughed so deep, as the hot sun and winds will dry up the moisture in the beds. When the corn has attained a considerable growth before it is ploughed, some caution is necessary, or it may

be materially injured by tearing off the lateral roots. The first furrows should be, then, made shallow, and not close to the corn. But when the corn is of a proper size, the earth should be well lapped up to it. After the corn is ploughed, the hoes should be sent through it, chopping down any weeds that may remain, and settling the earth about it. We do not recommend the use of harrows, skimmers, &c., after the corn is laid by with the plough, as they are rarely necessary. We will now proceed to make a few remarks in conclusion.

As regards re-planting, we think that the first part of the field planted should be re-planted as it is weeded. When the latter planting is all up, the whole should be re-planted. Corn should not be thinned until it is out of danger from the worm and other insects. When such is the case, it ought to be thinned as it is weeded. After a rain, when the ground is too wet to work the corn, the hands should be employed in *thinning*, and *setting*. Suckers should always be pulled away; they prove injurious in many ways.

Your committee would, above all, recommend that, whatever may be the various processes of working the corn, it *be done in season*. Although it may be stirred and worked in, apparently, the roughest manner, during the early part of the season, yet it becomes more delicate than the sensitive plant during hot, dry weather of mid-summer, when it is about to silk and tassel, and will not bear the slightest interference with the earth near its roots.

All of which is respectfully submitted.

THO. L. HUNTER,
H. M. TENNENT.

For the Southern Planter.

HILLSIDE DITCHES.

Mr. Editor,—I am a young farmer with a plentiful lack of experience and knowledge, and I would be greatly obliged if you or any of your correspondents would give me information concerning *hillside ditches*. I have put this question to many of my neighbors: Are hillside ditches advantageous and commendable? And I have received such conflicting answers, that I am rather confounded than convinced or instructed. One person averred in reply to my question, that attractive pecuniary considerations alone would induce him to allow ditches to be cut along his hillsides; another answered they were beneficial to the soil, and essential to profitable tillage; a third briefly remarked, hillside ditches are certainly humbugs, probably nuisances; while several other respondents uttered mere empty incoherences, as men are too apt to do, when they are requested to speak in an intelligible, and, if possible, in a sensible manner. From such jarring opinions, Archbishop Whately the acutest of living logicians, could scarcely deduce a satisfactory and decisive conclusion. I therefore desire to carry the case up to your assize, where the subject can be scientifically discussed or explained, and the matter settled by a definite judgment. In the present weather, when "the rain it raineth every day," ditches naturally run in the thoughts of the contemplative husbandman, and form a very appropriate theme for literary exercises. I am afraid Virgil's words in the Second Georgics *scrobibus superabit terra repletis* (the land will abound with choked furrows,) will be unpleasantly applicable to our wheat fields after these heavy washing showers.

I am, sir, with high respect,
Your very ob't servant,
RICHARD HENRY FOOTE.

Aspenbrook, April 5, 1852.

We beg that some one who is competent will enlighten Mr. Foote and the "hillside" public on the subject of hillside ditches. The best mode of making them has already been stated by Mr. Wm. P. Shepherd of Nelson, in the last volume of the Planter, page 335. The question is as to their policy. Having never had one and not having seen many, though we live in the midst of mountains, and never having seen a good one, we do not feel able to discuss them. We must, however, in candor, confess to a dislike of them, and a preference for deep ploughing as an effectual substitute.

SALT FOR FIXING AMMONIA IN MANURE.—It is well known that in a close stable where there are many horses, there is a very pungent smell affecting the eyes and nose, particularly when the stable is being cleaned out. This smell is occasioned by the flying off of ammonia, which is the essence and value of manure, and which volatiles or flies off at a very low temperature—even the warmth of the manure in a stable will send it off—and it goes off in great quantities by the common heat of manure in a farm-yard, whether thrown up in heaps or not.

There is a very cheap and simple remedy for this. Before you begin to clean out your stable, dissolve some common salt in water; if a four-horse stable, say four pounds of salt dissolved in two buckets of water and poured through the nose of a water-pot over the stable floor an hour or so before you begin to move the manure, and the volatile salts of ammonia will become fixed salts from their having united with the muriatic acid of the common salt, and the soda thus liberated from the salt, will quickly absorb carbonic acid, forming carbonate of soda; thus you will retain with your manure the ammonia which would otherwise have flown away, and you have a new

and important agent thus introduced, viz: the carbonate of soda. As this is a most powerful solvent of all vegetable fibres, and seeing manures have to be rendered soluble before they can act upon vegetation, it will be at once apparent that the carbonate of soda so introduced must be a most powerful, and valuable agent.—*English paper.*

For the Southern Planter.

ANALYSIS OF SOME SPECIMENS OF MARL.

Mr. Editor,—With the view of ascertaining what other elements of fertility the marls of the tide water region of Virginia contain, besides the carbonate of lime, I some time since requested specimens from Edmund Ruffin, Esq. who very kindly furnished them. I have completed the examination of four of these marls. Hoping the results obtained may prove of interest to some of your readers, I send them for insertion in the Planter.

No. 1. This is a yellow eocene marl from Coggins' Point on James river, referred to on page 207 and following of the third edition of Mr. Ruffin's Essay on Calcareous Manures, and used by him in the experiments detailed on pages 93-4 of the same essay. It is composed of—

Carbonate of Lime,	39.879
* Sulphate of Lime, with a little Sulphate of Alumina,	1.987
Chloride of Sodium,	.209
Potassa,	.801
Soda,	.336
Alumina and the Oxide of Iron,	7.177
Organic Matter and Water, the former containing 0.10 per cent. of Ammonia,	4.920
Silica and loss, with traces of Magnesia and Phosphoric Acid,	44.691
	100.000

From this analysis we conclude that if we wished to apply the marl at the rate of one hundred bushels of carbonate of lime to the acre, we must apply two hundred and fifty bushels. Mr. Ruffin informs me that a bushel of moist marl, when it comes from the pit, weighs one hundred and five pounds, therefore we may safely assume the weight of dry marl to be not less than eighty pounds to the bushel. Then a dressing of two hundred and fifty bushels of this marl to the acre, would yield, in addition to the one hundred bushels of carbonate of lime, about *four hundred pounds of dry plaster, one hundred and sixty of potassa, forty of common salt,* and *sixty of soda.* The *ammonia,* too, although so small in quantity, would amount to twenty pounds—as much as is contained in *one hundred and twenty-five pounds of good guano.*

* Both estimated as Sulphate of Lime.

No. 2, This is one of the eocene green sand marls from the Pamunkey, an account of which may be found on page 225 and following of Mr. Ruffin's essay. It is composed of—

Carbonate of Lime,	35.891
Sulphate of Lime,	.858
Potassa,	.924
Soda,	.201
Alumina and Oxide of Iron,	7.307
Bisulphuret of Iron,	1.450
Organic Matter and Water, the former containing a small amount of Ammonia, but its per centage was not determined,	4.300
Residue, Silica, with traces of Magnesia and Phosphoric Acid.	

The bisulphuret of iron, on exposure to air and moisture, would become oxidised and yield an additional amount of sulphuric acid, equal to 1.93 per cent.; this uniting with lime would give an additional per centage of plaster, equal to 3.29.

To apply the marl No. 2, so as to give one hundred bushels of carbonate of lime to the acre, there must be two hundred and eighty bushels of it applied, and there would be yielded, in addition to the lime, one hundred and ninety pounds of dry plaster, two hundred of potassa, forty-five of soda, and sufficient of the bisulphuret of iron to keep up a supply of plaster for a number of years.

No. 3. This is another of the Pamunkey green sand marls, but from a lower bed than No. 2. It contains, of

Carbonate of Lime,	31.195
Sulphate of Lime,	.231
Potassa,	.612
Soda,	1.002
Bisulphuret of Iron,	1.946
Residue, Silica, Organic Matter, Oxide of Iron, &c. the Organic Matter containing a very small per centage of Ammonia—amount not estimated.	

About three hundred and twenty bushels of this marl would be required to yield one hundred bushels of carbonate of lime, and it would then give, in addition, fifty-seven pounds of dry plaster, one hundred and fifty of potassa, and two hundred of soda. The bisulphuret of iron, by its gradual oxidation in the soil, would yield 2.59 per cent. of sulphuric acid, or 4.40 per cent. of dry plaster.

No. 4. This is a yellowish white miocene marl from Hooper's, King William county. It is composed of—

Carbonate of Lime,	62 065
Potassa and Soda,	.137
Oxide of Iron and Alumina,	2.376
Organic Matter and Water, the former containing a small per centage of Ammonia,	2.750
Residue, Silica, with a little Magnesia and Phosphoric Acid.	

About one hundred and sixty bushels of this marl would be required to yield one hundred of carbonate of lime, and there would be yielded besides the lime but from fifteen to

twenty pounds of potassa and soda, together with a little ammonia.

The amounts of oxide of iron, silica and alumina, added in these several cases, have not been considered, as it would rarely happen that they would exert any special influence.

Yours, respectfully,

WILLIAM GILHAM.

Virginia Military Institute, March 7, 1852.

The foregoing report of the constituent parts of certain marls of peculiar qualities is a valuable addition to the before existing information on this subject. We believe that this is the first, and so far the only aid of this kind rendered by a scientific investigator to the agricultural laborers in this interesting department, in Virginia. And this total withholding of aid from chemical science has not been for want of long and full notice that such aid was needed. The proportion of the principal, and usually the only important manuring ingredient of marl, its carbonate of lime, is easily enough ascertained, and with sufficient accuracy—and this has often been done by persons who make no pretension to proficiency in either scientific or operative chemistry. As far back as 1821, in the first published sketch of the "Essay" referred to above, its author described the peculiar "gypseous marl," (of which No. 1 is a sample,) stating that it contained a very small proportion of gypsum, and to that ingredient ascribed some of the peculiar effect of this marl. (American Farmer, first series, Vol. III. p. 317.) In the later edition of 1832, its supposed peculiar composition was still more enlarged upon; and in that of 1842, the author stated that besides the known proportion of carbonate of lime, and the small and uncertain proportion of gypsum, this marl contained "some kind of saline matter which cattle are fond of licking, believed to be sulphate of alumina, and some greensand." He added this remark: "I confess that all these additional ingredients, together, do not seem to me sufficient to account for the superiority which this marl exhibits as manure." It is just thirty-one years after this earliest indirect call for the aid of science and ten after the latest, that it has been first answered. Besides the stated sulphate of lime (gypsum) and supposed sulphate of alumina (Epsom salts) Professor Gilham has found common salt and ammonia, of which the existence had not been suspected.

Further: The eocene marls of the Pamunkey have been found in use so superior to the miocene marls, even richer in carbonate of lime, that the most intelligent farmers who had observed their comparative results, had inferred that the former must contain some other fertilizing principle. In a later publication (1849) Mr. E. Ruffin stated of this marl, that besides its carbonate of lime, it has "also in very small amount, some other fertilizing ingredients, of which scarcely any thing is yet known. There is certainly some gypsum." These supposed ingredients are now identified and their proportions fixed by Prof. Gilham, for the first time.

The eocene marl, so abounding in South Carolina, has been found in sundry cases to contain large proportions of phosphate of lime—in some cases as much as five to eight per cent. as reported by Professors Shepherd and Smith of Charleston. That most valuable of all mineral manures is scarcely appreciable in these eocene marls, in which *traces* only of phosphoric acid were found.

PERIOD OF GESTATION OF DOMESTIC ANIMALS.

It is often important for farmers to know the exact length of time that the different domestic animals go with their young.—The following table contains the times of those which most concern him, as near as we can ascertain them:

Mare,	11 months.
Jennet,	11 "
Cow,	8 "
Goat,	4½ "
Ewe,	5 "
Sow,	4 "
Bitch,	2 "
Cat,	8 weeks.
Rabbit,	4½ "
Rat,	5½ "
Mouse,	4½ "
Guinea Pig,	3 "

Period of incubation of domestic fowls:

Swan,	6 weeks.
Turkey,	4 "
Goose,	4 "
Duck,	4 "
Pea Hen,	4 "
Guinea Hen,	3 "
Common Hen,	3 "
Pigeon,	2 "

Granite Farmer.

For the Southern Planter.

STRINGHALT IN HORSES.

I have heard persons say that *stringhalt did not affect a horse's value*, and *could not be esteemed an unsoundness.*

Youatt and Spooner, celebrated English veterinary surgeons, say, they have never dissected a case of stringhalt without finding *disease of the sciatic nerve*, and consider it simply a disease of that nerve.

The *sciatic nerve* mainly supplies sensation and voluntary motion to the hinder extremities. Where it issues from the spine, it was found, in one case, darker, yellowish brown, *softened; ecchymosed*, or *blood-shotten* in the muscles of the haunch: in its subsequent course healthy.

Youatt says, "these irregular distributions of nervous energy *argue disease* and *predisposition to greater disease.* They interfere with a horse's speed, and *is a decided unsoundness:* yet, though an unsoundness, it would not weigh against other manifest valuable qualities."

Stringhalt is aptest to occur in horses *of good motion*, and hence men often say it is a sign of a good horse.

A POETICAL RECIPE FOR A "PLUM PUDDING."

AIR—"Jeannette and Jeannot."

If you wish to make a pudding in which every one delights,
Of six pretty new laid eggs you must take the yolk and whites;
Beat them well up in a basin till they thoroughly combine,
And be sure you chop the suet up particularly fine;
Take a pound of well-stoned raisins, and a pound of currants dried,
A pound of pounded sugar, and some lemon-peel beside;
Rub them well all up together, with a pound of wheaten flour,
And then set them to settle for a quarter of an hour,
Then tie the mixture in a cloth, and put it in a pot—
Some people like the water cold, and some prefer it hot:
But though I don't know which of these two plans I ought to praise,
I know it ought to boil an hour for every pound it weighs.
Oh! if I were Queen of England, or still better, Pope of Rome,
I'd have a vast plum pudding every day I dined at home.
All the world should have a piece, and if any did remain,
Next morning for my breakfast I would fry it up again.

PAYMENTS TO THE SOUTHERN PLANTER,

From April 1st to May 1st, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

R. Blackwell, to April, 1853,	$1 00
R. M. Hawthorn, to April, 1853,	1 00
T. H. Eppes, to January, 1853,	1 00
R. T. Lamb & Co. to January, 1852,	3 00
John C. Major, to January, 1853,	2 00
Powhatan Jones, to September, 1852,	1 00
Andrew Hart, to January, 1853,	1 00
W. W. Hancock, to January, 1853,	1 00
Thos. Perkinson, to April, 1853,	1 00
Dr. W. T. Banks, to January, 1853,	1 00
Col. R. A. Banks, to January, 1853,	1 00
Wm. Nace, to January, 1853,	1 00
Robert Martin, to March, 1853,	1 00
T. Michaux, to March, 1853,	1 00
John A. Britton, to January, 1853,	1 00
Andrew L. Pitzer, to January, 1853,	1 00
Dr. Geo. Field, to January, 1853,	1 00
James P. Marshall, to January, 1853,	1 00
J. B. Chandler, to January, 1853,	1 00
Dr. W. T. Minor, to January, 1853,	1 00
Capt. A. Slade, to April, 1853,	1 00
Joseph M. Edwards, to April, 1853,	1 00
Gen. Wm. Lea, to January, 1853,	6 00
Southall & Minor, to July, 1853,	4 00
Temple C. Moore, to January, 1853,	1 00
Reuben A. Hillyard, to January, 1853,	1 00
C. J. Bosher, to January, 1853,	1 00
Dr. P. P. Duval, to January, 1853,	1 00
Jas. L. Stringfellow, to December, 1851,	1 00
J. S. Payne, to January, 1853,	1 00
R. F. Ward, to January, 1853,	1 00
Thomas Austin, to January, 1853,	1 00
John R. Quarles, to January, 1853,	1 00
J. J. Crews, to January, 1853,	2 00
Col. Jno. A. M'Craw, to January, 1853,	1 00
Moses G. Hendrick, to January, 1853,	1 00
James M. Wright, to January, 1853,	1 00
Col. C. R. Eaton, to April, 1853,	1 00
Nathan Spriggs, to April, 1853,	1 00
P. C. George, to April, 1853,	1 00
Thos. Sharp, to September, 1852,	1 00
Wm. Thornhill, to January, 1853,	1 00
J. C. Holland, to January, 1852,	1 00
McKewn Johnstone, to April, 1853,	1 00
Dr. Watson, to April, 1852,	1 00
Caleb Leigh, to April, 1853,	1 00
Wm. J. B. Bedford, to January, 1853,	1 00
Geo. N. N. Porter, to March, 1853,	1 00
George W. Harris, to January, 1853,	1 00
A. B. Magruder, to January, 1853,	1 00
Ro. Douthat, to April, 1853,	1 00
Dr. Jas. Watkins, to January, 1853,	1 00
John F. Miller, to January, 1853,	1 00
John Diggs, to January, 1852,	1 00
Wm. Blackburn, to January, 1853,	1 00
John Johnston, to September, 1852,	1 00
Dr. Geo. Field, to January, 1853,	1 00

R. W. Field, to January, 1853,	$1 00
Sam'l C. Shelton, to January, 1853	1 00
Col. T. Perkins, to January, 1853,	1 00
Gen. J. H. Cocke, to January, 1853,	5 00
G. M. Savage, to March, 1853,	1 00
Allin L. Archer, to January, 1853,	1 00
S. D. Watkins, to January, 1853,	1 00
W. D. Gresham, to January, 1853,	1 00
John F. Whitfield, to January, 1853,	1 00
Gulielmus Colman, to March, 1853,	1 00
S. Hansberger, to January, 1853,	2 00
Benj. Brown, to January, 1854,	10 00
Dr. S. Fletcher, to March, 1853,	1 00
Thos. L. Preston, to July, 1852,	1 00
James Evans, to April, 1853,	1 00
S. M. Wright, to March, 1853,	1 00
Peter Quarles to January, 1853,	1 00
Wm. R. Holt, to January, 1853,	2 00
J. R. Jones, to March, 1853, R. F. Pritchett, to March, 1853, C. R. Christopher, to March, 1853, Dr. H. Field, to March, 1853, N. Birdsong, to March, 1853, J. Clayton, to March, 1853,	5 00
Thos. C. Buck, Jr. to January, 1853,	2 00
John G. Buck, to January, 1852,	1 00
* R. H. Timberlake, to January, 1853,	3 00
Jas. M. Davis, to September, 1852,	1 00
Andrew Pitman, to January, 1852,	1 00
Peter Boisseau, to January, 1852,	1 00
A. W. Cousins, to January, 1853,	1 00
James H. Dudley, to January, 1853,	1 00
Dr. James Jones, to September, 1852,	1 00
David Murray, to January, 1853,	3 00
Wm. N. Halstead, to April, 1853,	1 00
Wm. N. Nicholson, to April, 1853,	1 00
T. G. Trice, to January, 1853,	1 00
Wm. B. Rogers, to September, 1853,	1 00
R. E. Rogers, to July, 1852,	1 00
E. C. Marshall, to April, 1853,	1 00
Launcelot Tompkins, to April, 1853,	1 00
Launcelot Burruss, to January, 1853,	1 00
Jesse Corn, to April, 1853,	1 00
Peter Saunders, to April, 1853,	1 00
Dr. E. R. Peugh, to April, 1853,	1 00
James Townsend, Jr. to April, 1853,	1 00
Richard Russell, to January, 1854,	3 00
Sterling C. Anderson, to January, 1852,	1 00
John M'D. Alexander, to April, 1853,	1 00
Rev. T. M'Donald, to January, 1853,	2 00
A. Ellis, to April, 1853,	1 00
A. Michaels, to January, 1853,	1 00
A. B. Nicholls, to July, 1852,	1 00
John F. Lay, to April, 1853,	1 00
Wm. A. Winston, to April, 1853,	1 00
Samuel Cooke, to March, 1853,	1 00
Braxton Davenport, to January, 1853,	1 00
Sam'l W. Lackland, to April, 1853,	1 00
George Isler, to April, 1853,	1 00
Wm. Crow, to April, 1853,	1 00
James D. Gibson, to April, 1853,	1 00
Chas. A. Morton, to January, 1853,	1 00
Edwin Smith, to March, 1853,	1 00
Robt. A. Ridd, to January, 1853,	1 00
Dr. N. V. Clopton, to January, 1854,	2 00

* Mr. M. will see Mr. Timberlake and correct any mistake.

TO THE AGRICULTURAL PLANTERS OF VIRGINIA.

COMPOUND CHEMICAL MANURES.—John Kettlewell's (late Kettlewell & Davison's,) Agricultural Depot, Baltimore, Maryland—Renovator, Generator, Biphosphates, Mixture of Potash and Plaster, Pure Ground Plaster, with every description of Chemical residium for the improvement of Crop and Land.

The undersigned, after five years' experience, and a very considerable outlay of capital, has finally triumphed over every obstacle of doubt and prejudice, and is prepared to demonstrate that, for Crop and Land, he can present to the public the cheapest and best Manure known to the age.

His Compounds contain Ammonia, Potash, Biphosphate Soda, indeed every Chemical element, in a powerfully concentrated form, which the soil requires. Any one who doubts this can have his Salts analyzed at the expense of the undersigned, and if they fail in the test, he will return the money, if purchased.

In Wheat, he is willing to admit, that so powerful a stimulant as Guano, will, in many soils, produce a larger first crop, but very far less in a third crop, than his Salts. In Corn and Grass, he challenges a fair trial, upon any soil with Guano or any other Manure—and for any forfeit that would make the experiment interesting. For Corn and Grass, he avers that there is no Manure equal to his from a first to a fourth crop; and he is able to establish it by experimental proof.

His "BIPHOSPHATES" are pure, dissolved with the strongest Sulphuric Acid, and the Bones fresh. In England, no manure is in higher favor, or more sought after for Crop and Land.

His "RENOVATOR" is a Compound of every Chemical which science and experience have shown to be necessary to renovate worn-out land.

His "GENERATOR" is a compound made expressly for Tobacco, and is worthy the most careful investigation of the Planter.

His "PLASTER AND POTASH" is also manufactured for the growth of the Tobacco Plant, and when the almost absolute necessity of Potash is known, for the growth of prime leaf Tobacco, the value of this article may be readily estimated.

His "GROUND PLASTER" is so well known and so eagerly sought from the most distant sections of the Union, that he deems it only necessary to say, that below the standard he has adopted, the undersigned will never permit it to go. There is no article which the Farmer buys that he is more imposed upon, than in this one, of universal use.

In the January number of the American Farmer, the following reply is made by the editor of that valuable paper, in reply to the enquiries of a correspondent:

"Were we to plant Corn in land so poor, that when unaided by manure, would only

DeBow's Industrial Resources

AND PROGRESS OF THE SOUTHERN AND WESTERN STATES, in three large and closely printed volumes, small type, double columns; handsome print, paper and binding,—being a digest and abridgement of the 12 volumes of DeBow's Review. Price $10, or $3 33 per volume.

Desirous of supplying the large and continually increasing demand for the *complete series of the Review*, in 12 volumes, now exhausted, and which it would require a very large outlay to reprint, the editor has been induced to make a selection of all the important and valuable papers contained in them from the beginning, condensing, re-arranging and completing to date, and throwing the subjects after the manner of the encyclopœdias, into alphabetical order. In this manner everything of interest and importance will be preserved in a *convenient form for reference;* and the volumes will constitute the only repository for the shelves of the library, of such information, which by means of the monthly numbers hereafter will always be brought down to date.

The Volumes will embrace the gist of everything that has appeared in the Review relating to the *Southern and Western States.* (An imperfect index of which will be found at the opening of the 10th volume.)

To wit: Their HISTORY, POPULATION, GEOGRAPHY, STATISTICS; AGRICULTURAL PRODUCTS, of COTTON, SUGAR, TOBACCO, HEMP, GRAINS, NAVAL STORES, etc. etc.—MANUFACTURES; detailed accounts, statistics and history of all branches,—INTERNAL IMPROVEMENTS; complete statistics of RAIL ROADS, results profits, expenses, costs, advantages, miles in projection, construction, completed, etc.; Plank Roads, Canals, Navigation, etc.—*Statistics of Health and Diseases, wealth and progress; relative condition, whites and blacks*; SLAVE LAWS and STATISTICS, *management and amelioration of slavery,—origin, history and defences of slavery and slave institutions;* the valuable treatises of HARPER, HAMMOND, DEW, on slavery, etc.; COMMERCE OF THE SOUTH AND WEST in all of its minute particulars, etc. together with an historical and statistical sketch of *each of the states and cities,*—the *domestic and foreign trade, resources, manufactures, etc. of the United States;* the CENSUS RETURNS from 1790, with the COMPLETE STATISTICS OF THE CENSUS OF 1850.

The volumes will be issued in September, October and November, 1852, and orders are solicited in advance, payable on delivery to Merchants, or to the parties themselves.

DEBOW'S REVIEW, of which this is a condensation, is published monthly in New Orleans, and other southern and western cities, 112 to 140 pages, small print, fine paper and engravings, and treats of all the great industrial matters relating to the Southern and Western States, and incidentally of the North and the Union. Terms $5 per annum.

The volumes hereafter will be uniform with the condensed series.

A few sets of the complete work may be had at the office, in 12 large and handsomely bound volumes. Price $42. Single numbers supplied to make up sets, and binding furnished on reasonable terms.

☞Orders on Commission Merchants in cities or towns, payable on sale of crops, received as cash.

J. D. B. DEBOW,
Ed. DeBow's Review, Merchant's Exchange.
New Orleans, July, 1852—6t

PIEDMONT FEMALE ACADEMY.

THE Second Term of the First Session of this Institution will commence on the 20th of July. The subscriber is making an improvement by which he will be enabled to take five or six more young ladies after the 20th of next month. Terms $60 for five months for board and tuition in all the English branches and also in the French language. An additional fee of $15 will be charged those who take lessons in music. Address the subscriber at Gordonsville, Orange County, Virginia.

july—2t J. W. GOSS.

ANALYSIS OF SOILS, &c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va.

DAILY AND WEEKLY DISPATCH.

THE Daily and Weekly Dispatch, published at the office on Governor street, near Main, Richmond, Virginia—commenced in October, 1850—have reached a very astonishing popularity. The DAILY DISPATCH is a penny paper and has an immense circulation in Richmond and contiguous towns. It affords the best medium for advertising. Subscribers in the country furnished with the paper at the low price of Four Dollars per annum.

The WEEKLY DISPATCH is published at ONE DOLLAR PER ANNUM, and is therefore one of the cheapest Newspapers ever published. It is a handsome sheet and contains the News of the Day, together with Literary Selections from the very best sources. The list is already very large and constantly increasing. No paper will be sent until paid for in advance. HUGH R. PLEASANTS is the chief contributor to the editorial columns of the Daily and Weekly Dispatch. Address the Proprietor, Richmond, Virginia.

AUSTRALIAN WHEAT.—VERY SUPERIOR.

THE berry of this grain is extra large, and makes the best of flour. It produces a greater average crop than any other variety now grown in New York. Several years' experience in its cultivation, proves that it is less liable to rust or mildew than other kinds; and as the stalk is large and strong, it is also less liable to blow down or lodge. Price, $4 per bushel. Other varieties of wheat, such as the White Flint, Mediterranean, Black Sea, &c.

Also Agricultural Implements of all kinds, and Field and Garden Seeds.

A. B. ALLEN & CO.
189 and 191 Water street, New York.
june—3t

EAGLE FOUNDRY.

THE subscriber having removed to the large Foundry, just erected by him and fitted out with machinery of the latest and most approved style, is, in addition to the manufacture of Tobacco Flattening Mills, prepared to receive orders for Stationary Steam Engines, Saw and Grist Mills, Agricultural Machines, Tobacco Presses of every description, and all kinds of Iron and Brass Castings. He pledges himself to execute faithfully, and with dispatch, all work entrusted to him, and respectfully solicits a call from his friends and the public generally.

The highest cash prices paid for old cast iron, brass and copper.

PHILIP RAHM,
je—1y Cary, between Pearl and 15th sts.

COCHIN CHINA AND SHANGHAE FOWLS.

THE subscriber has for sale a few pairs of PURE BLOODED Fowls, from the above stock, originally imported by himself, warranted true to their name, and not surpassed by any other stock, for good qualities, in the country. Reference given in regard to them if desired.

Orders addressed to the subscriber for the same will receive attention.

CHARLES SAMPSON.
West Roxbury, Mass. June, 1852.—2t

2 SOUTHDOWN BUCKS FOR SALE.

THE subscriber has for sale Two Bucks of the Southdown Blood. These Sheep are descended from the best Southdown stock in England. They are grandsired by the buck imported by Bishop Meade from the flock of Mr. Webb, and they are sired by an equally good and well bred sheep, obtained of the late Dr. M'Caulay, near Baltimore. This sheep has a long pedigree of illustrious ancestors. My bucks are seven-eighths Southdown and the remainder Cotswold and Bakewell blood, and are now one year old, and ready for service in October next.

RALEIGH COLSTON,
Near Woodville Depot P. O. Albemarle.

VALUABLE AGRICULTURAL WORKS for sale by NASH & WOODHOUSE, Eagle Square.

The Complete Farmer and Rural Economist and New American Gardener, by T. J. Fessenden, in one volume, about 700 pages, cloth, gilt—$1 25.

Johnston's Agricultural Chemistry—a new edition, in one volume, 12mo. cloth, gilt—$1 25.

Johnston's Elements of Agricultural Chemistry—50 cents.

Johnston's Practical Agriculture, one vol. cloth—75 cents.

Buist's Family Kitchen Gardener, cloth—75 cents.

Hoare's Treatise on the Cultivation of the Grape Vine on open Walls—50 cents.

Sheep Husbandry, by H. S. Randall—$1 25.

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Brown's American Bird Fancier—50 cents. Mail edition—25 cents.

Canfield on the Breeds, Management, Structure and Diseases of Sheep—$1.

The American Architect, the cheapest and best work of the kind published in the world, complete in 24 numbers, at 25 cents each, or $5 for the work complete—$6 bound in two volumes.

Youatt and Martin's Treatise on Cattle, with one hundred illustrations, edited by Ambrose Stevens, Esq.—$1 25.

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Elements of Agriculture, translated from the French, by F. G. Skinner, adapted for Schools—25 cents.

Gunn's Domestic Medicine; or, Poor Man's Friend in Affliction, Pain and Sickness—$3.
mar—1y

UNION AGRICULTURAL WAREHOUSE AND SEED STORE.

RALPH & Co. No. 23 Fulton street, New York, near Fulton Market, Dealers in all the most approved Agricultural and Horticultural Implements, Imported and American Field and Garden Seeds, Ornamental Shade and Fruit Trees, Guano, Bone Dust, Poudrette, &c. Wrought Iron Ploughs, Trucks, Barrows, &c. &c. always on hand. Also, the Excelsior, or California Plough. mar 3t

DEVON BULLS FOR SALE.

THE subscribers, having lately entered upon the business of Breeding Devon Cattle, now, for the first time, offer for sale some of their Bull Calves. Their stock is all recently imported from the celebrated herds of Messrs. George Turner and James Quartly, Devonshire, England, who are well known as he first breeders of Devons in the world; and being in no way related to the older importations into this country, their bulls will afford a good opportunity for crossing the old stocks.

Those we now offer are *Uncas* and *Keokuk;* the first, calved March 19th, 1851—the other, February 17th, 1852; their pedigree is the same, viz: sire, "Megunticook," grandsire, "Prince Albert," dam, "Non-Pareille," by "Lord Lynedock." "Megunticook" won the first prize at the American Institute in 1850, and at the New York State Show in 1851.—"Non-Pareille" won the first prize at Barnstable, Devonshire, in 1846, and at the New York State Show in 1851. "Prince Albert" and "Lord Lynedock" were both favorite prize bulls of Mr Quartly. Also "*Red Jacket*, calved May 5th, 1852; sire, "Megunticook," dam, "Meadow Lilly," by "Baronet," grand dam, "Helena," bred by Mr. James Quartly.—"Baronet" has won four first prizes, including that at the Royal Agricultural Society's Show, at Norwich, England, in 1849.

Several animals from our herd will be exhibited at the New York State Show, to be held at Utica in September next, and at the American Institute in October. They may all be seen at any time on our place, two miles north of Rhinebeck Landing, on the Hudson river. (As yet we have not any heifers for sale.)

W. P. & C. S. WAINWRIGHT.

Rhinebeck, Duchess county, N. Y.
je—3t

PILKINGTON'S OR LUCK'S IMPROVED PATENT SMUT MACHINE.

THIS Machine has proved itself to be one of unrivalled excellence. It is warranted to answer every purpose of the most complete and expensive machinery of screens, rubbing stones, fans, &c. and will thoroughly clean the most smutty wheat. It is the best contrivance to take out chess, onions, and heavy grit, that has ever been used by millers. This machine is provided with self-acting oil feeders to the journals, and requires to be oiled but once a week. It wholly does away with the small fan. It runs at the rate of one thousand revolutions per minute, requiring but little power. We have sold a large number of these machines, and they have in every case given entire satisfaction. Price $60.

A. B. ALLEN & CO.

New York Agricultural Warehouse, 189 and 191 Water street, New York.
June, 1852—3t

TO THE AGRICULTURAL PLANTERS OF VIRGINIA.

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His "RENOVATOR" is a Compound of every Chemical which science and experience have shown to be necessary to renovate worn-out land.

His "GENERATOR" is a compound made expressly for Tobacco, and is worthy the most careful investigation of the Planter.

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In the January number of the American Farmer, the following reply is made by the editor of that valuable paper, in reply to the enquiries of a correspondent.

'Were we to plant Corn in land so poor, that when unaided by manure, would only

produce five bushels of Wheat, we certainly would not rely upon less than four hundred pounds of Guano, producing a good crop."

Now, not relying upon less than four hundred pounds would certainly imply that an additional hundred pounds would do no harm.

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These questions the experience of the Farmer can best answer. But at the present prices of grain they are of vital importance; although in agricultural journals but little discussed. In Pennsylvania, the most lasting manure is called the best—further South, the first yield is the standard. Now, when these Salts are intended for Corn, the undersigned never recommends more than one barrel to the acre, (three dollars,) if applied in the hill—or two barrels for the poorest worn-out land. If the Corn crop is to be followed with a Wheat crop one barrel in the hill, and one broadcast is recommended, slightly harrowed in—in this way, the Salts are more efficacious than when applied with the Wheat at seeding time. For lasting benefit to Land, these Salts are only subordinate to fresh lime. As a top-dressing they are certain and valuable.

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Instead of publishing certificates, which is more expensive and less satisfactory, the undersigned begs leave to refer to the following names. He has taken this liberty without consultation or permission of the parties named, but from their intelligence, success and enterprise as Agriculturists, and their character as gentlemen of the highest respectability and honor, he has no doubt but what they would cheerfully impart their experience and information, many of them having largely used these Salts. The postal direction of each party is affixed. It may be proper to observe that the Salts do not produce as heavy a stalk *in Corn*, as Guano. For its yield the farmer must look to the grain of the Corn.

REFERENCES.

Professor Higgins, State Chemist of Maryland, Baltimore, for its Chemical constituents; Rev. J. S. Armistead, Stony Point post office, Cumberland county, Va; Joseph W. Twyman, Esq. Earlysville, Albemarle county, Va.; John M. Dow, Esq. Washington City, D. C.; Dr. Wm. Mosher, Catonsville, Baltimore county, Md.; Dr. William Kirkwood, Prince Georges county, Md.; Wm. H Herbert, Esq. Bellsville, Prince Georges county, Md.; Seth W. Warfield, Esq. Sheriff Howard District, Md.; Dr. Wm. J. Saddler, Saddlersville, Queen Anne county, Md; W. W. W. Bowie, Esq. Prince Georges county, Md.; George E. Yeatman, Warrenton, Fauquier county, Va; General Henry S. Stiles, Cecil county, Md.; H. E. Bateman, Esq Easton, Talbot county, Md.; Arthur M'Court, Baltimore; Dr. Robert Dorsey, of Edward, Franklin, Baltimore county, Md.; John L Stavesberry, Treasurer of Baltimore county, Baltimore; Peter Gowan, Esq. Laurel, Howard county, Md.; Col. Horace Capron, Laurel, Md.; Carrville S. Stansbury, Esq Baltimore county, Md., with hundreds of other names, but the above is amply sufficient for all practicable purposes. The Messrs. Barbours of Orange county, Va. have also used the Salts, with what effect the undersigned has never heard.

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JOHN KETTLEWELL.

Office at the Wholesale Drug Store of Ober & M'Conkey, corner of Lombard and Hanover streets.

Factory, Federal Hill, Baltimore, where, for personal investigation, I invite all persons that take an interest in Agricultural pursuits, who visit Baltimore, and to whom I will cheerfully explain my whole process. There is no secret in it.

Orders addressed to DEANE & BROWN, Richmond, Va. will be promptly attended to for John Kettlewell. mar 3t

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FRANK: G. RUFFIN, Editor. P. D. BERNARD, Proprietor.

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For the Southern Planter.

SCIENTIFIC AGRICULTURE.

BY PROFESSOR GILHAM.

NUMBER I.

(Continued from page 196.)

The operations of agriculture have for their object the productions of plants which are required as food, or are useful in the arts and industrial processes of man. It is, therefore, proper that we should commence our subject with a short account of the principal parts of which vegetables are composed, and by the instrumentality of which, under certain influences, all the phenomena of their existence are manifested. Let us first consider the

SEED.

The seed is the final result of vegetable life, and with few exceptions is the first point on which the attention of the farmer is bestowed, either to produce food for man and the domestic animals or to secure reproduction and multiplication of the species. The seed consists of a *nucleus*, or kernel, and an outer coating, or *integument*. The nucleus consists of the *embryo*, or substance destined to reproduce the plant from which it was derived, and of a substance consisting generally of starch and other nutritive matter, which usually surrounds the embryo, and is destined both for its protection and nourishment during the early stages of its growth. The embryo becomes a plant by the mere development of its parts; it is, in other words, a new individual; hence it is the most important part of the seed, and to its protection and support all the other parts are subservient. It possesses in a rudimentary or undeveloped state, all the essential organs of vegetation, namely, *root*, *stem* and *leaves*. In many cases these several parts are perfectly distinguishable in the seed: frequently, however, we can only observe an oblong body, cleft, or two lobed at one end; but in germination the undivided extremity elongates into a root, the two lobes at the opposite extremity expand into leaves, and the stem, or developed embryo, rises between them. The rudiments of the first pair of leaves are called *cotyledons;* the bud, which, if not actually visible in the seed, appears between the cotyledons when germination commences, is called the *plumule*, or rudiment of the stem, which is to expand into the stem and branches; and the portion below, which gives rise to the root, is named the *radicle.*

When the seed is gathered in a state of perfect maturity it is completely inert, the embryo being in a dormant state, and may be kept for any length of time without growing. Some seed after a few months lose their vitality altogether, and can never be made to grow, while a great many others may be kept for a number of years without injury, and some have been known to grow after having been kept for centuries.

The conditions necessary to germination are a free communication with the air, exposure to moisture, and a certain amount of heat, varying from fifty degrees to eighty degrees for the plants of temperate climates. Seeds are in the most favorable condition for germination in the spring and summer, when slightly covered with soil, which excludes light while it admits a free circulation of air, moistened by showers or by the water contained in the soil, and warmed by the rays of the sun. The water, which is slowly absorbed, softens all parts of the seed; it swells very considerably; under the influence of heat and air chemical changes commence in it, by which substances that before afforded protection to the embryo now supply it with nourishment; the embryo bursts its envelopes, the radicle or first rootlet is protruded, and taking a downward direction, fixes itself in the soil; while the other extremity elongates in the opposite direction, bringing the cotyledons, or seed leaves, and the plumule, bud, or top of the growing stem, to the surface, when the first leaves, which had their existence in the embryo, expand in the air. As soon as the roots and leaves are developed, each in their appropriate medium, the process of germination is completed; and the plant deriving through them its nourishment, continues, by the aid of light and a sufficient degree of warmth, to grow, producing roots which it sends down into the soil, and stems, branches and leaves, which it sends into the atmosphere. After a while flowers are produced, and these have for their object the production of fruit, the final term of which is the mature seed.

The phenomena of vegetation now cease; the whole of the organs of the annual plants wither and die; the work of reproduction and multiplication is completed, and thus begins and ends the life of the plants which are the usual subjects of the farmer's hopes and fears.

In biennial plants and trees the case stands differently. The plant vegetates as long as the temperature of the air is favorable, and there is sufficient moisture in the soil. During the winter the leaves fall, the plant is in a dormant state, and its growth is suspended; on the return of spring, however, there is a return of vitality, and it goes through the same round of increase in size in the stem and root, the production of leaves and flowers, the ripening of fruit, and the final suspension of its functions. In all this there is a close analogy to the original process of germination, and the after production of the perfect annual.

Let us now consider the plant a little more in detail. We have seen that whether we consider the annual which has an existence of but a few months, at most, or the tree which has been producing its annual supply of leaves, blossoms, fruit and seed, for centuries, both have the same end—the reproduction of seed; and consequently must be endowed with like organs, destined to perform the same functions. These organs are, 1st, the root; 2d, the stem, including the branches; 3d, the leaves, and 4th, the organs of *reproduction*, or those organs necessary to produce and perfect the fruit and seed. The first three are called organs of *vegetation*, or *nutrition*, and it will be remembered that they all exist in the seed in a rudimentary state. Botanists inform us that at a certain period in the growth of the plant a portion of the buds, instead of elongating into branches, are developed in the form of flowers, which contain the organs of reproduction, and that the nutriment which would otherwise go to the general increase of the plant, is expended in the production of fruit and seed.

The different parts of the plant when examined appear to be composed of still smaller parts, and when placed under the microscope, they are found to be made up entirely of a sort of net work, which divides the plant into numberless regular *cavities*, or *cells*, or of cells elongated into little tubes, or some other modification of the same cellular arrangement. When the vegetable fabric, or tissue, is composed of simple cells, it is called *cellular tissue;* when the walls of the cells are thickened and elongated into little tubes, it becomes *woody tissue*, or from its fibrous form, *woody fibre.* There are again other modifications of vegetable tissues which are called *vascular tissues*, or *vessels*, which are distributed throughout the plant.

OF THE ROOT.

The root is that portion of the plant, which avoiding the light, grows downwards, fixing the plant to the soil, and drawing nourishment from it. It gives off its branches without any regular order, and in most plants it has no pith. The root is generally conical, the smaller branches are always so, and they increase by the addition of new matter in successive external layers, so that the lower extremities, or points, are always the newest. Consequently the growing points are always composed of very delicate tissues; these absorb moisture with great avidity from the soil, and with it the necessary food for the plant. It is by these extremities, called *spongioles*, that all the moisture absorbed by the roots takes place. Hence the danger resulting from disturbing the plant during the season of active growth. So long as active vegetation goes on, the tender absorbent rootlets are renewed, but towards fall, when the plant has attained its growth for the season, the rootlets also cease to grow, the spongioles generally solidify, and their functions nearly cease. This indicates the season for transplanting, viz: in the fall, or in the early spring, before vegetation is resumed.

Roots, besides absorbing the crude food of the plant from the soil, also frequently serve as reservoirs of nourishment stored up for future use. The crude fluid, or sap, which roots absorb from the soil, is not, as such, employed in growth, but becomes changed by the aid of the vital principle, into starch, gum, sugar, &c.; and these substances, through the aid of the same vital principle, are employed in the formation of cells, woody fibre, &c. In the annual plant this food is expended as fast as it is prepared, in the formation of buds, leaves, branches, and finally, the fruit and seed; the production of the flowers and seed exhausts the plant greatly, and by the time the latter has ripened, the supply of nourishment is entirely consumed and the plant dies. Such plants always have branching fibrous roots, well adapted for absorption from the soil, but for no other purpose. But other plants have the power of accumulating in the tissues of their roots, a large amount of this prepared food for future use. This is the case with *biennials*, such as the carrot, beet and turnip. The tops of such plants die down in the fall; and when vegetation is resumed the following spring they make a rapid and vigorous growth, producing a large stem bearing flowers, fruit and seed, almost entirely at the expense of the previous year's accumulation. The store is soon exhausted, and the plant not producing a new supply, is likewise exhausted and perishes.

Substances which enter into the circulation of the plant through the roots, must be taken up in a state of solution. If solid substances could enter into the circulation by being simply held in a state of suspension in the water absorbed by the roots, the ashes of the plant would always be composed of those substances which are in the greatest quantity in the soil, and which are in the finest state of division; and specimens of the same plant growing on different soils would yield ashes

differing as much from each other as the soils in which they grew. It is found, however, that the composition of the ash of a plant is pretty nearly the same, no matter what may be the character of the soil, and that the addition of any insoluble matter to the soil does not produce any appreciable change in the composition of the ash. Roots also have, to a certain extent, the power of selecting those substances which are to enter into the circulation of the plant. If immersed into certain colored solutions the plant will soon be tinged all over from the absorption of the liquid by the root, while, if immersed in some others, no absorption will take place.

OF THE STEM.

The stem is that portion of the vegetable which, growing in an opposite direction to the root, seeks the light and exposes itself as much as possible to the air. It is composed of cells, woody fibre and vessels. At first it consists entirely of cellular tissue, a substance which ordinarily possesses much less strength than woody fibre; but as the stem grows, and in proportion as the leaves are developed, woody fibre, &c. are introduced, woven, as it were, into the original cellular tissue, giving it the necessary toughness and strength. Woody fibre is most abundant in shrubs and trees; it, however, enters more or less into the composition of the stems of all ordinary plants. The cellular part of the stem extends vertically to increase its length, and horizontally to give its thickness. Into this the woody fibre and vessels are introduced vertically, and establish a direct communication between the root and leaves.

The diversities in the internal arrangement of the stem result from the manner in which the fibre and vessels are introduced into the cellular tissue. These diversities are reducible to two plans. In one the woody fibre is deposited in *annual concentric layers*, between a central pith and an exterior bark; so that a cross section presents a series of concentric rings of wood surrounding the pith, and themselves surrounded by a bark which can be removed. This is the plan of the oak and of all the trees of cold climates. In the other, the woody system is not disposed in layers, but consists of separate bundles or threads of woody fibre, running through the cellular system without any apparent order, and presenting on the cross section a view of the divided ends of their threads in the form of dots, diffused through the whole. The appearance of such a stem may be exemplified in the cross section of the asparagus, or in the stalk of Indian corn. The plant in the first case increasing by an annual outer layer is called an *outside grower*, or *exogenous plant*, while in the second case, the new woody matter being deposited within the old, pushing the latter outwards, is called an *inside grower*, or *endogenous* plant. All plants of the grass tribe, including wheat, rye, &c. are inside growers.

The stems of all outside growers are provided with an outer coating, or bark, which is divided into the *liber*, or inner bark, the *outer* bark, and the *epidermis*, or skin, which surrounds the whole. The inner bark is composed of fibres and vessels, and like the stem, communicates directly between the root and leaves. Inside growers have no distinct bark, at least none that can be separated from the stem. We have seen that the spongioles absorb the crude sap from the soil, this ascends through the little vessels or tubes of the stem until it reaches the leaves, when it is spread out over a large surface, and exposed to the action of the air, by which it is modified in character, and fitted to nourish the plant. Then the sap commences its return to the roots, depositing the materiel for cells, fibre, &c. in its descent. In the trees and shrubs of our climate, the sap when it quits the leaves, passes down the inner bark, depositing its layer of wood just under the bark. When the sap first enters the stem it is very thin, as it ascends it acquires more consistency, and on its descent it becomes quite thick.

OF THE LEAVES.

The leaf is an apparatus in which the sap is spread over a large surface, and freely exposed to the air and light. The leaf is ordinarily regarded as an extension of the bark, expanded into thin lamina, and stiffened by tough woody fibres, which are connected with the bark and wood, and which form its frame work, or *veins*. The veins while they stiffen the leaf, serve to carry the sap to all its parts.

Leaves are generally developed in such a way as to present one surface to the ground, and the other to the sky; these two surfaces differ very materially in the offices they perform in the vegetable economy, and in their structure there is a corresponding difference. The upper surface presents a compact, glazed appearance, while the lower is much more loosely arranged. The close texture of the upper surface serves as a check to the excessive evaporation of the sap that would otherwise take place when the leaf is exposed to the heat of the sun, while the loose, open texture of the lower surface, permits the free access of air to every part of the leaf. Evaporation from the surface of the leaf is necessary, as it is the only means by which its very dilute food can be concentrated; and some arrangement is required by which a sufficient evaporation may take place when the plant is freely supplied with moisture, but restrain it when the supply is limited—such a provision exists in the leaves. The surface of the leaf is generally sufficiently compact to prevent the escape of much moisture through its membranes; but the exhalation takes place through innumerable little pores, or slits, distributed over its surface, called *stomata*, (mouths,) or *breathing pores*. Stomata open directly into hollow chambers, or cavities, which abound

in the body of the leaf, and establish a free communication between the interior of the leaf and the external air. These little pores are so formed that, when the leaf is in a moist atmosphere, and freely supplied with moisture, they expand and allow rapid evaporation to take place through them; but when the supply of moisture fails, they contract, and, by closing up, check the drain before it injures the plant. The number of breathing pores varies in different plants from about 800, to 17,000 on a square inch; as a general thing, there are a great many more in the under than in the upper surface of the leaves, their structure being too delicate for the direct sunlight. This explains why leaves are so apt to perish when artificially reversed.

OF THE FLOWER.

So far as known, the sole office of flowers and fruit in vegetables, is the production of seed; hence they are called the organs of reproduction.

It is found that the flower and fruit draw largely upon the nourishment of the plant, hence a due accumulation of food is requisite to sustain it. Annuals flower in a few weeks or months after they come from the seed, and having but little nourishment stored up, are destroyed in the process. Biennials flower after a longer period, rapidly exhausting the stock stored up during the previous summer's growth, and then perish; while shrubs and trees do not commence flowering until they have attained sufficient strength to endure it. The exhaustion resulting from flowering is sometimes shown by fruit trees, which after producing a very heavy crop, fail to bear at all the following year.

The organs of the flower are of two sorts: 1st, the leaves, or envelopes, called *protecting organs;* and 2d, the *essential* organs, or those immediately necessary for the production of fruit and seed.

The protecting organs comprise the outer green leaves called the *calyx*, and the showy part of the flower named the *corolla*. The essential organs are inclosed by them, and are of two kinds. The first are the *stamens*. A stamen consists of a column or stalk, bearing upon its summit a little cellular arrangement filled with a powder called *pollen*. Within the stamens and occupying the centre of the flower, are the seed-bearing organs, called pistils, and it is to the protection and perfection of these, that all the other parts of the flower are in some way subservient. At the bottom or base of the pistil, is a little sack or receptacle, containing a number of small bodies called *ovules*, or rudiments of the future seed.

The little cells of the stamen containing the pollen grains, contract by drying, and at the proper time, burst and throw them out. These falling upon and penetrating the loose tissue of the extremities of the pistil, pass down its interior, and finally reach the little cavity which contains the undeveloped seed. Then the process of fertilization is completed; the outer portions of the flower wither or fall off, the base of the pistil begins to enlarge, the incipient embryo makes its appearance, the fruit and seed assume their proper form, and in due time are perfectly matured.

In the above I have given a sort of general outline applicable to all flowering plants, without attempting any description of the differences which are found to exist in the seed, flowers, or other parts of different plants. In closing, however, it may not be amiss to advert to one or two specific differences which are familiar to all.

The embryo, which is generally within the seed, surrounded by the starch, &c. is exterior to these substances in all of the grains, as wheat, rye, &c.; and the cotyledon instead of rising above the ground, remains below, supplying the embryo with nourishment, until the first true leaves are formed. In some plants there is a suppression of one or the other of the organs of reproduction in the flower; in one flower the pistils will be absent, in another the stamens. The seed cannot be formed from either if taken by itself, but if both be present, the process of impregnation will be the same as if both pistils and stamens existed in the same flower. This difference in flowers has led to the expressions *pistillate* and *staminate*, to distinguish them. It frequently happens that one specimen of a plant produces a pistillate and another a staminate flower, as in hemp, certain varieties of the strawberry, &c. Finally the stamens and pistils are developed in different parts of the same plant, as in the Indian corn, where the *tassel* contains the stamens, and these throwing their pollen grains upon the *silk*, or pistils, the grains of corn are soon developed.

NOTE.—I am indebted to Grey's Botanical Text Book for most of the matter contained in the above article. I would recommend that work to all who may desire to become familiar with the principles of vegetable physiology.

For the Southern Planter.

DEEP PLOUGHING.

Mr. Editor,—In the June number of your paper, I was pleased to see a report, read before the Powhatan Agricultural Club by Mr. Harris, and ordered to be published in your paper. I read that paper with more pleasure and attention, because having the pleasure of his acquaintance, I believe him entirely adequate to the discussion of any subject appertaining to agriculture. In that report, he mentions that the advantages of deep ploughing have never (that he knows) been subjected to experiment, and regrets, (if I draw the right inference,) the fact of such experiment being more or less hindered by prejudice and pre-

conceived opinions. If, in order to disabuse the minds of some, and clear up the doubts of others, I can succeed by offering one suggestion, I will consider myself paid the trouble of writing this article. Believing as I do, that the best way to sway the American people is by an appeal to their reason, and not by flaming inuendoes against their folly, I shall briefly state a few reasons which argue in favor of deep, thorough ploughing. We will first premise what observation and facts have clearly established, viz: that plants receive their support from the soil, the atmosphere and the clouds. This being the fact, it clearly follows that those conditions which tend to bring a plant in contact with the largest amount of air, soil and water, are the conditions best calculated to insure its quick, perfect and full maturity. If we shall prove that deep ploughing furnishes those conditions to a greater extent than shallow ploughing, then its superiority will be established, and the most cogent reason given for its speedy performance. In order that our position may be fully understood, and our remarks rightly appreciated, we will state in what consists the main elements of a plant, and which of those elements are derived from each of the above mentioned sources. The main bulk of a plant can by heat be resolved into carbon, hydrogen and oxygen; now what portion of this is derived from the atmosphere? It is composed of oxygen and nitrogen mainly, together with hydrogen and carbonic gas. The carbonic gas is absorbed directly by the plant; and being composed of carbon and oxygen, is decomposed by it, and thus two of its constituents are furnished. This gas is largely absorbed by water, and thus is furnished another of the modes by which it is received into the substance of the plant, being carried up in solution with the sap. We have always believed that the nitrogen of the atmosphere serves more as a vehicle for the conveyance of oxygen, carbon and hydrogen, than for the direct nutriment of the plant; and our belief is founded on this fact: that while nitrogenous manures plainly increase the luxuriance of all plants, nitrogen is found by analysis, only in the cabbage, clover and some few other plants. Then what is its use? We believe, (we repeat,) that it is only a vehicle for the transmission of other substances. When in the nascent state, (that is when just emerging from previous combination,) it unites with oxygen and hydrogen, forming with the one nitric acid, with the other ammonia; both of these are soluble in water, and both have a strong tendency to combine, forming nitrate of ammonia, a soluble salt; this contains five parts of oxygen, three of hydrogen and two of nitrogen; the two former are assimilated by the plant, the last is set free, its chemical affinity being destroyed by the superior vital power of the plant, and it is set free in the nascent state, the most favorable one for recombination. We thus find that the atmosphere furnishes three of the most constant constituents of the plant; and a great deal of the above mentioned absorption is carried on through the roots. Now, any system which increases the number of those roots, and the free access of air laden with such precious food, must be beneficial. Deep ploughing, by doing away with the mechanical obstacles to the free spread of the plant's roots, meets the first condition; by rendering the soil permeable, it subserves the latter, ergo deep ploughing must be beneficial. Again, a plant contains besides the above, several salts, the most constant of which is carbonate of potash; this substance exists in the soil as silicate of potash; as such it is insoluble; by contact with the air it gives up silicic acid, absorbing carbonic acid from the air, and thus becoming the carbonate of potash, a soluble salt, found in the ash of all plants, (except marine.) Now the silicate of potash exists in the subsoil as well as the surface soil, probably more abundantly in the one than the other, since it has there been less exposed to the atmosphere. Now if we can break up the subsoil so as to allow a sufficient amount of atmosphere to penetrate to this substance, converting it from a silicate to a carbonate, so as to allow the rains to dissolve the carbonate so formed, and the roots of the plant to reach it thus soluted, we shall have thus obtained a great desideratum. Since deep ploughing obtains these three conditions, he who wishes this important constituent for his crops should be quick in availing himself of its advantages. The soil contains other salts, which analysis detects in plants. Now all of these are capable of being soluted, or so intimately mixed with water as to observe all the laws of a solution. The rains falling for a long period on the soil have carried, in the form of solution or mixture, a vast amount of these salts into the subsoil, where to all practical purposes, they are lost, since the roots and atmosphere are forbid entrance to them—but put in your subsoil plough, break up and remove this obstacle to their ready entrance, unlock this hidden storehouse, and your augmented crops will amply repay your trouble. Again, a soil too wet or too dry is barren; in the one case because a superabundance of water prevents that ready ingress of warmth and air, on which the well being of plants depends—such soils are often called sour, we presume from their favoring the generation of acid. If too dry, that solution of its food is denied the plant, as well as that amount of water necessary for its luxuriance. Now both of these conditions can be obviated: if too wet, break up that hard pan stratum which prevents the water from diffusing, and by thus deepening your soil you allow water that was confined to six inches, to be diffused over fifteen, when you will have little cause to complain of over-wet; nor infer from this that you will render your land too dry, for remember plants are fed in three ways, with water from the clouds, from air and by capillary attraction. When you plough your land deep,

you allow the rains which formerly saturated six inches, to be diffused through fifteen inches of soil. A large portion of this water is absorbed by the clay of the soil, and held fixed until such affinity is destroyed by the vital power of the plant. Now supposing you to take land formerly broken six inches, and break it eighteen, you, (admitting that the same amount of clay exists for every inch,) insure the absorption of three gallons of water where only one was absorbed before: and while you do this, you allow as fair ingress of air and the plant's roots to these eighteen inches, as existed before to the six; and since air and water both avail the growth of a plant, that system, which furnishes three times the amount formerly furnished, while it increases the ability of the plant to avail itself of that amount by increasing the depth and surface of its roots, must be superior to that plan which only gives one-third the above amount. Since deep ploughing gives the three gallons and shallow the one, the former has three to one as odds in its favor. We said that plants were fed by capillary attraction—now what is this? it is that power of attraction which the sides of a tube exert over a fluid, causing it to ascend the tube, (this obtains only in very small tubes.) Now the soil of all countries is full of these minute tubes, and water beneath the surface has a tendency to ascend to the surface in virtue of this law—meeting with a hard pan subsoil, it is hindered from farther rising, and there remains, or is absorbed by the surrounding clay: in either case it is lost to the thirsty plants; but break that crust and it rises in reach of the plants' roots, or if it is absorbed, the roots entering its absorbent can apply it to their wants. Lastly, clay has a strong affinity for ammonia. If by subsoil ploughing, we can furnish a large amount of clay to act upon the ammonia of the atmosphere and the rain, we thus obtain and retain a large amount of a highly nutritious substance in a situation the best suited to afford its nutriment to the plant. Much more I might add, but forbear to trespass on your columns farther. With kind wishes for the success of your paper, I remain,

Respectfully yours,

WILLIAM H. HENNING.

Richmond, July 5th, 1852.

CATCHING FLIES.—The Prairie Farmer tells how they catch flies in England. It is done by "fly-papers," and the process is called "fly torture," on account of the manner in which the insects have their feet fastened in the "*stocks*." The article used is rosin and sweet oil mixed, and spread over the surface of a newspaper, and then slightly sprinkled with sugar dust. The moment the fly puts down his foot he is fast. They are thus caught with great rapidity. The "torture" appears to consist in a want of liberty to go where they please.

For the Southern Planter.

ENCLOSURE SYSTEM OF VIRGINIA.

ADDRESS OF THE FARMERS' CLUB OF NOTTOWAY TO THE FARMERS OF VIRGINIA.

In addressing you, fellow-farmers of Virginia, on the evils of our present fence law or enclosure system, we would be candid as well as earnest. The subject is one of great interest to every landholder. Should we appear too enthusiastic or zealous, you will bear with us, when we assure you that we speak from hard experience, while we are endeavoring to exhibit the weighty burden which the present law imposes on us. Should we be so fortunate as to have your concurrence in opinion, we would invoke your hearty co-operation in bringing about a repeal of the law. We have more than once petitioned our Legislature, but so far to no purpose—we now appeal to the fountain head of power for redress. Our legislators in this matter, as in some others, are waiting to follow in the wake, rather than, like men who feel and know the wants of their constituents, boldly lead in the advance. Should any of you differ with us, we ask your unprejudiced and dispassionate consideration of our views, and then should you not see cause to alter your opinions, we shall be ready and happy to receive and consider in like manner your views on the other side. We abhor the idea of trespassing on the rights of any one, and should we become convinced that a majority of our fellow-farmers do not agree with us in opinion, we will bow with due deference and respect to the right of the majority. We know we are advocating a change in a system which has prevailed from the earliest period of our State's history, and we are fully aware how difficult it will prove to effect it, but under this great disadvantage and fully sensible of the magnitude of our undertaking, we still feel upheld by a consciousness of proper intention, that we are advocating a cause of immense advantage to the farming interest, that we are seeking the good of all and the injury of none—that we have justice and right on our side; and

"Thrice armed are they who have their quarrel just."

With this pleasing assurance we address ourselves to the task before us.

The present fence law of Virginia requires every man to enclose his land with a fence five feet high, and of sufficient closeness to exclude all animals likely to injure crops, in order that his fields may not be molested. It is well known that in the greater portion of Eastern Virginia, at least, the system is such, and the arable lands lie in such a manner, that in enclosing the cultivated portions a great deal of other land is included. So far as our observation extends, the uncultivated

portions exceed in amount the cultivated.—Under these circumstances it will be found necessary generally for the farmer to enclose the whole or greater part of his farm. This is a source of a vast expenditure in time, timber and labor. To show this, we will call your attention to the following report, drawn up by three of our most practical members, who have learned by experience the truth of the facts they exhibit. We feel confident you will not find it exaggerated to suit the case, but if anything too favorable to the present system.

REPORT.

The Committee appointed by the Farmers' Club of Nottoway to estimate and report the comparative cost of the present system of enclosure with one forbidding the roaming of stock at large, report that they have no data founded upon their own experience, of the cost of the proposed new system, but we think it will be manifest to every man that under a law requiring every one to enclose his own stock, instead of the existing law, which requires every one to guard himself against the stock of the whole country, a kind of fence might be adopted which, at most, would require but one-half of the amount of timber, and but one-half the amount of labor, in providing materials for fencing. Your committee have adopted as a basis of their estimate as applied to the State at large, what they believe to be a fair estimate of the fencing required on a farm of one hundred acres. We estimate that it will require to enclose one hundred acres of land lying in the most convenient form (a square) 2800 yards; the necessary dividing fences would amount to one-half or 1400 yards, making 4200 yards of fencing necessary for enclosing a farm of 100 acres. At 2½ yards to the panel this will give 1680 panels, which at 13 rails to the panel, make 21,840 rails, equivalent to the work of one hand for 218 days, or 8 months and 6 days. One-third of this has to be repaired annually, say 560 panels, which at 4 rails to the panel, calls for 2240 rails or 22 days' work for one hand. We estimate that it will take the same hand as long to haul and put up the rails, as it did to maul them, making the whole time 44 days. To maul, haul and put up the rails annually required on such a farm, allowing the day's labor to be worth 30 cents, would be worth about $18, including finding, &c. The same farm enclosed with post and rail fence, at 10 feet to the panel, will require 1260 panels, which at 7 rails to the panel, require 8820 rails, equivalent to the work of one hand for 88 days. One-third of 1260, or 420 panels would require repair annually, which at 2 rails to the panel, would make 840 rails, equivalent to the work of one hand for 8 days. We estimate that one hand can put up 10 panels of this fence per day. At this rate it will require 126 days to post and rail in such a farm and 14 days annually to repair it and 4 days to put the materials in place, and 8 days to get materials, making 26 days; at same per day the whole cost would be $9.

We further estimate that on such a farm, where enclosing crops could be dispensed with, that 10 acres would be sufficient permanent pasture, for the stock on the farm, to enclose which, with the usual fence, would require 908 yards or 362 panels of fence at 2½ yards to the panel, which at 13 rails to the panel would require 4700 rails, equivalent to the work of one hand for 47 days; one-third of this or 120 panels to be repaired annually at 4 rails to the panel, requires 480 rails, equivalent to the work of one hand 4 days, and to put in place and put up 4 days more, making 8 days annually to repair, estimated at $3. The result of our estimate is, that if one hand cultivate such a farm, under the existing system, he would pay in a tax on his labor for fencing of 18 per cent. with common fence, with post and rail fence 9 per cent. and under a system of enclosing stock and not crops, he would pay 3 per cent. If 100 acres be the average size of the farms of the State, and the returns of the census would seem to show that to be about the average under the present system, the farmers of Virginia have a capital of $22,411,200 invested in perishable fences. The post and rail system would require but a capital of $11,205,600, and a system of closing stock and not crops but $3,735,200.

RECAPITULATION.

4200 yards of worm fence—1680 panels at 13 rails to the panel gives 21,840 rails.	
218 days' work mauling at 30 cents per day, gives - - -	$65 40
109 days' putting up at 30 cts. per day,	32 70
109 days' hauling at 75 cents per day,	81 74
Expense of enclosing 100 acres under the present system, - -	$179 84
560 panels of annual repair, 4 rails to panel, 2240 rails.	
22 days' work mauling at 30 cents,	$6 60
11 days' putting up at 30 cents, -	3 30
11 days' hauling at 75 cents, -	8 25
Amount of annual expense under present system, - - -	$18 15
4200 yards post and rail fence, 10 feet to panel—1260 panels, 7 rails to the panel—8820 rails, mauling which, 88 days work at 30 cents, - - - -	$26 40
44 days' hauling, at 75 cents, -	33 00
126 days' putting up, at 30 cents,	37 80
Expense for post and rail for same farm,	$97 20
420 panels, 2 rails to the panel, 840 rails, mauling.	
8 days' work, at 30 cents, -	$2 40
4 days' hauling, at 75 cents, -	3 00
14 days putting up, at 30 cents, -	4 20
Annual expense of post and rail fence,	$9 60

10 acres for pasture require 908 yards of fence or 362 panels, at 13 rails to the panel, 4700 rails.	
47 days' work, at 30 cents, -	$14 10
23½ days' putting up, at 30 cents,	7 05
23½ days' hauling, at 75 cents, -	17 62
Expense of enclosing 10 acres permanent pasture, - - -	$38 77
One-third of 362 panels or 120 panels, at 4 rails to panel—480 rails.	
4 days' work, at 30 cents, -	1 20
2 days' putting up, at 30 cents, -	60
2 days' hauling, at 75 cents, -	1 50
Amount of annual expense of permanent pasture, - - -	$3 30

W. R. Bland,
G. A. Cralle, } *Committee.*
T. F. Epes,

After you have given the above your careful consideration, we would further call your attention to the inconveniences of the present system, aside from its expensiveness. The most of men who own farms of usual size, have roads or streams running through them. Wherever a fence crosses a stream there must be a water gate. This, with the whole line of fence on the bottom land is liable to be washed away by freshets, and oftener than otherwise these occur at the busiest season, when crops suffer most from depredation. What redress is there when, from this cause wholly unavoidable on his part, a man suffers by having his crop destroyed? How can the loss of time necessary to repair damages be redeemed? For this emergency the law makes no provision. Again: one or more roads intersect a man's land. Up and down these the cattle of the whole country are permitted to roam. Out of this number, nine times in ten, there is one who scorns all impediments when an inviting field is before him, and in his track the whole herd may follow. Is it enough to say that in this case, if your fence was a lawful one, you have a right to kill or seize as your own? So you have, if there is proof positive that such was the case, but if not, you dare not do it, lest a lawsuit befal you, in which the burden of proof will rest with you, showing that the fence was knocked down by the animal you have killed. Those who are peaceably disposed will, and do suffer many such annoyances rather than kill or go to law.

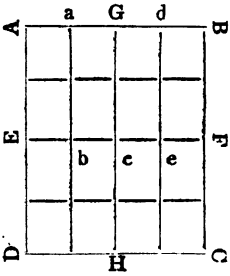
But there are bad neighbors in many communities—men who will stoop to mean and low acts. Your fences may be so strong and high that no common animal could disturb or overleap them. Yet here the law can be easily evaded. You have fields waving with the yellow harvest, unprotected save by these fences. An unprincipled neighbor may secretly turn his whole stock in on them and cause a destruction before the fact is known, more than equivalent to the value of the stock. Is there any means of redress here? This may be done by a slave, with or without his master's consent, and the fact may be known, still the injured party has no means of redress, for the law makes no provision in this case. Does it not on this account tempt men to do what otherwise they would fear to do? It may be said that this does not often happen. It may not—but it has happened and will continue to occur, until mankind shall be regenerated, or until the law throws around the just and honest the ægis of its protection, and overawes the unprincipled by the penalties of its violation.

By the requirements of this law every man is not only compelled to protect his own crops from the intrusion of his own stock, (not an easy task at all times,) but has also to guard against the stock of all his surrounding neighbors—and it may be against the stock of as many more if he have the misfortune to have a road running through his land. For instance, a man's farm may be bounded by the farms of six others. He is liable to intrusion from his own and stock of all these, some of whom may have twice or twenty times as many as he. How can he escape from these besetting him on all sides? With his own and those of his neighbors, he has seven herds to contend against, and each of his neighbors is as bad off as he, or worse. What is one man's case in this respect is the case in a greater or less degree of every one. Thus, in the State of Virginia, taking this case as a standard, there is seven times the liability of crops to depredation, than there would be were the law so framed as to make it the duty of every man to enclose his own stock. Under this law, there would, in all probability, be seven times less destroyed than now is, and we believe if the whole amount of this could be ascertained, it would be sufficient to enhance the products of the State a handsome per centage.

But, aside from the evils, just mentioned, the present fence law is the cause of nine-tenths of the neighborhood feuds existing.—We could cite your attention to communities composed of honest, correct and thriving farmers, who would live in peace and friendship, were it not for the annoyances occurring constantly under the present system. Those who have had promising crops destroyed or injured, by the depredation of stock, know how hard it is to control the outbursts of passions, when excited by these annoyances, and how aptly coldness, and sometimes enmity, creep in between men, formerly warm friends, who do not really intend to do wrong, but who, from the deficiencies of the present system, and the tenfold greater burdens imposed thereby, fail to conform strictly to the right course. Laws were framed for the benefit of mankind, but we believe this one to be the source of more neighborhood disturbances than all other causes combined, and were there no other argument against it but this, it would be a sufficient cause for its repeal.

There is, we are happy to know, a new spirit beginning to animate the farmers of Virginia. They are seeking every method of improving their lands; in fact, having little original virgin soil, they are compelled to resort to an improving system, or emigrate. The improvement of the soil, then, becomes the foundation of good and successful farming, and to encourage it, every effort of those who legislate for us, should be made. To this end, every impediment in the way of the farmer should be removed, and every incentive to exertion held out. The report above given, shows that a very large per centage of the farmer's time, timber and labor, are expended on fences, which soon decay, and from which he receives no return, serving as they do only to keep out stock from the field. Suppose all this time and labor were expended by the farmer on the improvement of his land—what a different return would he get? How much more land would he yearly reclaim, and how much valuable timber would he save? If this time could be devoted to collecting materials for manure, draining and reclaiming, a short time only would elapse, before a change would be manifest. Now, a man has to reserve a large portion of wood-land to supply materials for fencing, which lies perfectly idle. Were the law altered, no cause would exist for this, and it might be cultivated and be made to pay. Under this law, a proper rotation of crops is seriously interfered with, scarcely less important to the farmer than making manure, in the improvement and preservation of his land. The five-field rotation, so productive and so improving to land, will be entered into with great difficulty and not without some sacrifices, as long as this law exists. Another branch of husbandry of great importance, viz: stock-raising, is seriously interfered with by this law. There is at present little or no chance of our stock becoming generally and permanently improved, so long as all kinds, especially the most worthless, are permitted to roam at large.

It is a well established fact, that as a country becomes highly improved, the farms are reduced in size, and that small farms reciprocally conduce to rapid and perfect improvement. Manure cannot be hauled to advantage over a certain distance, nor can the accumulation of it be so readily attended to at a distance as it can be near the homestead. In the most improved sections of this and other States, farms seldom contain more than 500 acres. This being true, many farms in Eastern Virginia must be reduced in size in order that they may become as rich and productive as they should be. But, by this reduction the amount of fencing would be so much increased that some sections would be deprived entirely of timber. By this subdivision and increased amount of fencing, the amount of labor would be also increased to put up and keep in repair the fencing. To this important fact we would call the particular attention of those owning small farms and those wishing to divide their farms. When a farm lying in the most convenient practicable form,—a square—is divided into two farms, the fencing required for the two will be greatly increased. To illustrate this, let us take the following figure. Suppose ABCD to be 16



acres, in the form of a square. To enclose this will require (supposing an acre to be 70 yards square) 280 yards on each side, or 1120 yards. Now suppose this land be divided into 2 equal parts, represented by ABEF and EFDC. ABEF will now require 280 yards on two sides and 140 on the other two, making 840, instead of the half of 1120 (560). But a farm has to be divided by cross fences. Suppose the whole 16 acres, ABCD to be divided into four fields, of equal size, the dividing fences represented by EF, GH. Then the land would require the enclosure fence, 1120 yards, and the dividing fences, EF and GH, each 280 yards; in all 1680 yards. Now, dividing the farm as before, there would be ABEF, 840 yards, and the four fields divided by fences at a b, G c and d e, each 140 yards, making 420 yards—which added to 840 would make 1260 yards, necessary to enclose and divide 8 acres. Double this amount, 2520 yards, would be necessary for the two farms, instead of 1680—or it would require 840 yards more, equal to one-fourth of the whole fencing. So that, if a man divide his farm into two, and lay each off as before, it will require one-fourth more fencing for the two than for one. Again: suppose EAGc to be a square mile of land, or 640 acres. To enclose this will require 4 miles of fencing. Many would suppose that it would require four times as much for four square miles of land, or 2560 acres, in the form of a square; but it does not; for, by referring to the figure, the four square miles represented by ABCD only require 8 miles of fencing. So that if a man wish to divide a farm of 2560 acres into four farms, he will have twice as much fencing for the four farms as he would have for the whole in one farm. Now, suppose there are two farmers, one owning 2560 acres, and the other 640. Suppose that they have hands and timber in proportion to land. If one own 24 hands, the other will own 6. The first will have 8 miles of fencing to make and keep in order, to enclose his land; each hand will then have 8-24 or 1-3 of a mile of fencing; the other, 4 miles, and each hand 4-6 or 2-3 of a mile of fencing—just double what the other has. Again: say one-fourth of their land is in timber; one will have 640 acres of timber land to keep up 8 miles of fencing, or 80 acres to the mile; the other will have 160 acres of timber land to keep up

4 miles of fencing, or 40 acres to the mile. We hope this will serve to show what a great disproportion exists in enclosing large and small farms, and what great burdens and disadvantages weigh upon the small farmer. Nor is this the only disadvantage a small farmer has to bear. When a farmer, owning four times as many cattle, lives adjoining him, his small field will suffer greatly more when his cattle break into his small field than when his few cattle get into the field of his wealthier neighbor. So long as small farms are liable to these objections and disadvantages—which must ever be the case until the present law is abolished—they can never become common, or as profitable as they otherwise would be; and, therefore, the State can never become as highly improved as it should be, nor support as many to the square mile as it could do under favorable circumstances. On this account the natural increase of the farming community will be driven into other States or into other professions, as has been the case for many years past. This will account for the many large farms, which now contain in many instances several small farms, whose former owners have emigrated to the West or South, where land is cheaper and where small farmers do not labor under so many disadvantages.

Thus have we given some of the main objections to the present enclosure system, and disadvantages resulting therefrom. We propose now briefly to consider what change we think should be made in the law, and the advantages which would thence be derived.—What we want then, is, that the law be so altered as to compel every man to enclose his own stock. With this law, a farmer will have to defend himself only against his own stock; so that if he now have ten herd of cattle to contend against, he will then have ten times less annoyance and expense than he now has. The large and small farmer would then stand on equal ground. If one acre will support one cow, five acres will support five, and one hundred acres will support one hundred. It would doubtless put some to inconvenience, but it cannot bear unequally or unjustly on any one. Some who have stock and no land might be inconvenienced, but they ought not to complain, for we leave it to their judgments to say which is most just, that their few cattle should put the whole community to trouble and expense, or the whole community should have their rights respected, when simple justice requires it. If a man has a right to subsist his cattle on another's land without leave or compensation, why has he not a right to subsist his negroes? If he have a right to graze another man's land and thus deprive it of its growth, why should he not have the right to remove materials from it for making manure, or the wood for fire or other purposes? The present law bears very hard on the landholder. A man may have any amount invested in land, and unless he enclose and protect it, it is at the mercy of every intruder. Our present Constitution requires that all property shall be taxed uniformly; why then should not the law protect all property uniformly? which this does not. A man's cattle may be found on another's premises destroying property, but unless the injured man can prove his enclosures perfect and that the cattle did overleap or knock down his enclosures, he dare not kill or injure them. Moreover the landholder has to expend 25 per cent. of his labor and timber in protecting his property, worth one thousand dollars, from stock not worth twenty dollars. We appeal to every man of reason and justice to say if this is equal protection; if this, in other words, is equal taxation? We know custom has long sanctioned this gross injustice, but that renders it not less oppressive. As it now is twenty men sometimes have to go to the immense expense of enclosing their whole farms to keep out the cattle of one man. Would it not be more like fair and even justice for this man to be compelled to take care of his own stock, rather than thus put twenty to the expense of fencing, costing each one twice as much as his cattle are worth? Land is not so high as to prevent all who own cattle from securing a sufficient amount to subsist them.

There are some who say we have our farms fenced, we do not care for a new law—the new law will not force you to pull down your fences—you can pursue the same course as now, if you prefer to do so, and no one can object, but all your fencing will not be necessary. A standing pasture, embracing your wood and waste land or one-fourth, at least, of your farm, enclosed, will amply subsist as many cattle as you ought to keep. Good cattle well kept, will be more valuable than mere cattle which gain a scanty subsistence on the commons. The improved breeds of stock might, under the proposed law, be introduced with profit, which cannot now be done to advantage always. But the main advantage of the new law would be the rapid and speedy improvement of land, and with this, other improvements will follow as a natural consequence. Under the proposed law, manure-making might be reduced to a regular system, and well nigh the whole winter devoted to it. If this could be done, we confidently believe that in a few years our State would assume almost a new aspect. Our railroads and rivers would groan under their accumulated burdens, and in the greatly increased prosperity of the farmer all other professions and trades would share. The mechanic, particularly, whose prosperity ebbs and flows with the farmer's, would soon forget the deprivation of the scanty commons and rejoice in high prices and abundance of work. The most advantageous system of rotation could then be adopted and the resources of our soil developed. With improved lands and increased production, the surplus population of the State could be supported, and that destructive tide of emigration

which has for years been bearing off some of our best and most enterprising citizens, would cease to roll. Our State would feel the mighty impulse, and with her great natural advantages she would quickly regain her lost pre-eminence in wealth and population. Society deprived of one of the greatest enemies to its peace, would become more fraternal, and thus the interests of virtue and religion, of intelligence and benevolence would be greatly advanced.

If such are to be the beneficial results of the proposed change, to agriculture, society and the State, where is the man, who would not undergo the few petty inconveniences which may occur under the new system in its incipient stages? Few, who are convinced of its advantages, will, for this reason, oppose it, and still fewer, we believe, will be injured by the change.

Thus have we, fellow-farmers, endeavored as briefly and candidly as we could, to call your attention to this important subject. It is one so interesting, so important in its bearings and results, that we could not easily have said less. We hope you will receive and consider our views in the same spirit in which they are advanced. We address *you*, as *you* have it in your own hands to say whether or not you will unite with us in putting an end to a system, so opposed to our interests as farmers, to the peace of society, and the prosperity of Virginia.

QUICK BEEF GROWING.

The New York Farmer has a letter from a correspondent on a new and quick method of getting either a small beef or a large veal, which seems to be worth notice. His method is this:

"Mr. D. M. Crowell took ten calves (all heifers) last spring, and commenced feeding them on sour milk at a few days old, keeping them on the same kind of food during the summer, taking good care to feed them uniformly, but not very abundantly, so as to keep them growing thriftily, without forcing too rapidly. In the fall they were put in the stables, and fed on hay and a little meal, increasing the quantity of the latter gradually, with the view of fitting them for beef in the spring, at one year old or a little under.

"These ten calves now look like young oxen, and are estimated to weigh about five hundred pounds each, alive. They will probably be sent to market soon, say next month, when we shall see how such beef will sell, and how it will be relished by the lovers of good eating."

For ourselves, we should hardly find it in our heart to decline a dinner of the best of them. We understood from Mr. C. who is one of our best farmers, and is making this trial by way of experiment, that he is not quite satisfied thus far with the present attempt to raise a beef in one year, and that he intends to renew the experiment another year, when he thinks some improvement can be made.—*Prairie Farmer.*

For the Southern Planter.

THE DIFFICULTIES OF AGRICULTURAL EDITORSHIP.

Improvement from the Accumulation and Management of Domestic Manures—Danger of Waste from Chemical Action, not Evaporation—Culture of Indian Peas, as a Cleansing and Improving Crop.

I cannot conceive of a more difficult position, for an editor, than yours. One may, with comparative facility, fill up a periodical with well written, scientific, moral, or religious articles; he may draw from the wide regions of fancy, things new and old; he may attempt, in the foul fields of politics, to kill vile weeds, or drain filthy pools; but suitably and efficiently to tell how man, by the sweat of his brow, is to draw sustenance from the bosom of mother earth, how he is to prepare her surface for abundant crops of fruit, and exterminate noxious weeds, when addressing incredulous and prejudiced readers, "*hoc opus, hic labor est.*"

One of your name—I presume a relative—once nobly sustained such a post. How much benefit he conferred on his native land, let those determine who prefer the civic wreath to the warrior's laurel. Why he relinquished his high position, I know not. I suspect he was all unconscious that he was a propitious harbinger of joy to his country, and was kindling a light destined to illumine the land. Could you enlist to your aid, in the cause of agriculture, his efficient pen, many, rejoicing to march in his lead, would flock to your paper. You, sir, have many difficulties in your way, all of which I will not mention. It is true, there are many more readers on agriculture, than in the days of "The Farmer's Register;" but they are mostly pre-engaged to journals published out of the State. I see no prospect of your deriving pecuniary benefit. Yours must mainly be *a labor of love.* Think not that the pen, now enlisted in your service, is moved by a vain belief of its owner, that it can do much for you or the public. The volunteering of a patriotic private may arouse enthusiasm in those well qualified to command. This is about all that is wanting. What hinders Old Virginia from assuming not only the fame, but the profit and the happiness of an enlight-

ened agriculture? Let her ask pardon of her noble agricultural sister, North Carolina, for ever having called her "Rip Van Winkle." Let her awake from her own centennial nap, and arouse her sons to filling gullies, removing rubbish, applying manures, and spreading verdure over her fields. This is a great work, and I nominate you, sir, as superintendent, or, in planter's phrase, overseer, and I trust you will call forth the ablest hands, and set them to work. On this subject I was once sceptical, but am now convinced, for I know lands worth double what they were five years ago.

In attempting to contribute a mite to this great work, I will state some of my own operations, and give the reasons for varying in any particular from what are considered as received opinions. Manuring has well been pronounced the main spring of successful agriculture. It surely is proper then to pay some attention to the means of collecting and manufacturing materials and applying the manure to the land. I never succeeded in a manner at all satisfactory, until I devoted a cart, a four-ox team, and an able bodied driver, almost exclusively to the business of hauling the material in and the manure out. On lands as steep as my high lands, oxen are better for this purpose than horses. At distances convenient to different parts of my farm, I place my hog-pen, my sheep-pen, my steer-pen, my cow-pen, and my stables along a ridge road for half a mile, and by this arrangement save much of the hauling. I make my sheep and cow-houses of wheat-straw, laid upon spacious frames, at the time of threshing. Much of the manure, by this means, can be made under shelter, and be prevented from excessive fermentation. I use as litter, besides the offal of my grain crops, all the leaves—particularly of the pine—which I can collect. Pine leaves being more permeable by fluids than oak leaves, receive and absorb urine to greater advantage. I consider it a great mistake and very injurious to agriculture, to consider "evaporation the great thief of manure." Chemical action, I think, the real thief. I believe that Virginia has lost incalculably from manures being permitted to lie in piles until three-fourths of their richest gases have escaped. To obviate this, I have endeavored to have half my land, intended for wheat,—the other half lying in clover,—thoroughly ploughed in winter, and then I begin to haul out and spread my manures, finishing, if practicable, by the first of June; then I plough again, to turn under the blue grass—not the Kentucky, but the *Poa Compressa*, a great nuisance to wheat—and other pests, while they are in bloom. After this, I sow cow-peas, and harrow. By this means, the manure is prevented from violent fermentation. In dry weather its moisture evaporates, and in wet its soluble materials soak into the earth, and soften and mellow the clods. By the time the pea crop is to be turned in, the fiery properties of the manure will have been subdued, and such parts of it as may not have been converted into pea-haulm, will be in a fine state to afford nourishment to the wheat. I am now harvesting some of the finest wheat that I ever saw grow, on lands enriched with unrotted manure, little more than a year ago. In a climate so changeable, where large quantities of manure are made, much of it would become effete, or, as the Scottish farmers would say, fire-fanged, before it could be applied to the land, were not special pains taken to avoid bulking, and other causes of chemical action. I think this subject most worthy of consideration.

But it may be asked, why not dispense with the pea crop, and apply the manure to clover in its infant state? This would do, possibly, better on lands sometimes cultivated in corn, or other hoe crop, which might serve to cleanse it of weedy pests. Having low grounds enough to furnish me with corn and oats, and believing that corn detracts greatly from the fertility of high land, I prefer on this account to use the pea as a cleansing crop. So far, I have great reason to be satisfied with the arrangement, for I find the low grounds, alternating with corn, oats and grass, aided by frequent inundations, rapidly improving, while the melioration of the high land has far surpassed my highest expectations. Since adopting this system, I have been compelled to cultivate in wheat on alternate years; I am, however, striving to clean up and improve land enough to afford me three shifts for wheat, and then, I hope, from increased means, of my own manures and a cautious resort to concentrated manures, to be able to manure one of them annually, at least a with moderate top-dressing, for a crop of peas, followed by wheat. I began about four years ago with my high land, (viz: most of it,) miserably poor, galled and gullied. It already more than doubles its former crops of wheat, having the crop of clover and peas on alternate years returned to it. When it becomes richer; and especially when but one crop of wheat shall be taken from it in three years, I hope to cut much clover hay from it, and to commence fattening my hogs on the peas. For the last two years, I think my wheat greatly improved, in quality as well as quantity. This may be, in a great degree, ascribed to the seasons, but I think much of the credit is due to the animal manure, so necessary for forming good grain for the wheat crop.

I have two strong reasons for getting the peas sown early; the first is because I suppose all the pests, such as onions, blue grass, ribwort, wild carrots, &c. are in a weaker state, and more easily destroyed when exhausted, by putting forth their blooms, than at any other time. My land was greatly poisoned with onions, and I have been much surprised to find what a near approach has been made to their extermination, even where they once grew thickest, by ploughing them in and sowing peas while they were in bloom. Nature affords to such nuisances a wonderful recuperative

power of shooting forth new roots, and preparing for another crop soon after their seed have ripened. The second reason for early sowing is, that the woody fibre may be ripened before they are fallowed for wheat in the fall. I think it highly important that what are called green crops should not be turned under when they are in a literally *green* condition, and consist of little besides sap. Let them be only ripe and it matters little whether they are in a living and succulent condition, or dead and dry. In the first state they will rot quicker.

I could say much more on these matters, but find I am becoming tedious. While I envy you not, the arduous labor of your position, unrequited, for the most part, I fear, even by a modicum of gratitude, I cannot conclude without congratulating you on the pleasures incident to the editorship of a journal, promising so much benefit to your country, and on the lively interest and good will excited towards you, in the bosoms of many good men. I could not comfortably read a journal, conducted by any man, without feeling that there was a certain bond between us. I feel also deeply thankful to Mr. Bernard, for his persevering efforts in the cause, and believe that he is, at length, about to succeed.

Very respectfully,

W. S. MORTON.

Cumberland, July 3, 1852.

Dr. Morton, in the commencement of his essay, does no more than justice to Mr. Edmund Ruffin's achievements in behalf of agriculture. The Southern Planter has had "the aid of his efficient pen" in sundry instances, and to a considerable extent, though he usually writes anonymously.

But he has written voluminously and under his own proper name, for the American Farmer. This was upon the footing of a busines arrangement and contract made with Mr. Sands before we became connected with the Planter; and though we know that these essays would add very greatly to the attractions of our columns, we have not felt at liberty, by transferring them thereto, to deprive Mr. Sands in any degree of the benefit he expected to reap, and no doubt has reaped, from his contract. We understand that this direction of his writings ceased after the present State Agricultural Society of Virginia was established, Mr. R. then deeming it his duty to address to that body whatever he might thereafter write, upon subjects of practical instruction in agriculture, and suitable in form as well as substance to be so directed.

As Dr. Morton says, most of the readers "are pre-engaged to journals out of the State." This is a free country and we have no right to complain, but it does strike us as somewhat inconsistent that it should be so. "Protection to *home* industry," says the Whig, and—sends off to another State for his agricultural journal! "Southern rights and products, 'at all hazards and to the last extremity,'" says the Ultra—and takes his Northern farming paper and sends North for his plough!

But we wander from our subject. Mr. Edmund Ruffin (who is not so near of kin to us, let us say, as to make it indelicate in us to praise him,) has done much for his country, has earned a claim to something more than a testimonial and a dinner from the citizens of Prince George, his "jury of the vicinage," though that was doubtless most gratifying to him, and certainly most creditable to his entertainers. He has earned a testimonial from the Legislature so lavish of swords to military men, that it is hardly a distinction to have received one. But his friends have never claimed it for him, and the Assembly, good, easy souls, as the man had never an epaulette upon him, never thought of it. If they had, we hardly think he would have got it, to judge by the treatment he has lately received at their hands.

He had, at considerable labor, prepared a statistical table illustrative of the benefits of marl, which is not his hobby, but his horse. According to that table, it appeared that the greatest advance in the whole of Eastern Virginia has been in the marl region. Now he wanted to ascertain the exact truth in regard to that matter—to show precisely what marl had had to do with it; thereby to encourage the active, to stimulate the indolent, and to set forth the advantages possessed by a very considerable part of the State. But he could only do that by ascertaining who had marled, and how much in each case; then by comparing the facts thus obtained with the facts as derived from previous assessments and census reports, he could have shown it exactly. All this could have been done with but little trouble and no expense. It was merely necessary to instruct the commissioners of the revenue, in the marl district, to inquire of each farmer whose, tax list they took, how much of his land was in woods, how much cleared, and

how much marled. It could have been done by each commissioner in less time than it has taken to write it here. He, whose labors have furnished so great an increase in the taxable property, so much of the fund for internal improvement, and in other ways so much solid wealth to the State, and who is complimented whenever it suits the politicians to tickle the agricultural interest, literally throwing "a tub to the whale," by-the-by, petitioned the Legislature to do this simple and inexpensive thing, this thing which could by no possibility benefit him, but would be of great service to the State. And instead of granting it with alacrity as a boon to him, and with cheerfulness as an advantage to the State, it was flatly refused by the House of Delegates, and was never reached by the Senate. We have heard that one of the leading farmers of the Legislature was positively opposed to it, and its defeat has been mainly ascribed to him. Now we have but one word to say about it, and that is that such a proceeding was a disgrace to the Legislature. We hope they will yet reconsider it and retrieve their character, but we owe it to candor to say, we fear they will not.

FLAX COTTON OR BRITISH COTTON.

Two weeks ago we inserted a letter from a friend, now travelling in Europe, respecting the progress made in the manufacture of flax cotton goods, or in other words, of goods manufactured from flax resembling cotton, from the newly discovered process of preparing the raw material. At the same time samples of this flax cotton, ready for the mill, were sent to us, which we now have on hand for exhibition to persons desirous of examining them. With these samples came also an elaborate argument in favor of the new cloths, and a general statement describing the process of preparing the raw material, the latter of which we publish below as possessing high claims to consideration for the farmers and manufacturers of this country.—*Telegraph.*

"The flax plant is composed of three distinct parts, the wood, the fibre, and the gum resin, which causes the fibres to adhere together. To remove the wood is the first object; and this, under the old system, was performed by a machine little better than a flail. Here commences the first improvement. At Stepney factory we saw a small apparatus at work, which, costing a mere trifle, removed the wood from the fibre with astonishing rapidity and cleanliness. It is proposed that growers should employ this machine on their farms; by which means they reduce the bulk by one-half, and at the same time retain the portion most useful for manure. In this state it will be brought to market for sale to the manufacturers, who will then have to free it, in the first instance, from the gum resin. Under the old system, this was effected by steeping the flax in cold water, a process which occupied from four to six weeks, and frequently caused much discoloration of the fibres. The Chevalier's mode consists in boiling the material in a weak alkaline solution for about four hours, after which it is washed first in a slightly acidified liquor, and then in plain water. It is then dried and in a fit state for the various processes of scutching, heckling, &c. necessary to render it fit for the linen manufacture. In order to "cottonize" the flax, according to the Claussen's patent, the fibres are taken from the washing vats direct to a series of other vats, ranged side by side; and it is in these that the magic of chemistry is so brought to bear as to transmute a heavy mass of dark, harsh straw, in the course of some minutes, to a light, silky, snow white wool.

In the first of these vats is a weak solution of carbonate of soda; here the previously boiled and washed fibres are steeped for about fifteen minutes, during which time they become completely saturated with the soda liquid. To explain the chemical action which follows, it is necessary to point out the structure of the flax fibre. These fibres, minute though they be, are cellular, composed of a number of smaller cylinders, united closely at their side. It is the separation of these finer fibres, and the consequent addition to the length and surface of the whole mass, that has now to be accomplished; a process that may well be likened to hair splitting.—These cellular fibres being thoroughly saturated with the soda in most minute quantities, are removed from the first vat, and placed in vat number two, containing water slightly acidulated with one part in five hundred of sulphuric acid. The change which now takes place is instantaneous. A rapid frothing and ebullition of the liquor may be observed, and the heavy mass of flax which, in the first liquor, sank far

below the surface, is now seen floating lightly on the surface of the water. It is no longer flax—it is British cotton. And how has this happened? The acid in this liquid, finding its way into the liquid cylinders, already saturated with the soda, immediately effects a chemical change; the sulphuric acid combines with the alkali, and forms sulphate of soda, giving out the carbonic acid gas from the carbonate of soda, which, seeking its liberation, expands and bursts open the cellular tubes. The cottonized flax is next placed in a weak solution of soda, in order to free it from any remaining acid; and thence transferred to the bleaching vat, which contains a mixture of solution of chloride of lime and sulphate of magnesia. Here it remains during two hours, at the end of which time it wears a perfectly snow white appearance. The process is then completed by washing, first in a weak acid liquor, and afterwards in pure water. It then only remains to dry the flax cotton, in order to fit it for the after processes, preparatory to spinning. The same method as has been here described, can be made available for converting the refuse tow from the flax establishments into a fine white article, admirably adapted for paper making, and at a less price than he pays for linen rags. The value of this latter preparation may be estimated, when it is known that one manufacturer of linen in the north of Ireland throws aside "refuse tow" to the yearly value of five thousand pounds sterling; all of which, at present, is utterly useless.

From what has been stated, it is evident that the objection held against this process, of its converting a dear article into a cheap one, does not hold. Not only is the value of the British cotton greatly enhanced by being rendered capable of spinning at the low cost of ordinary cotton goods, but the yield of marketable fibre is much increased, and at a much less cost of time and labor than was needed under the old method. The new fibre is so completely assimulated in character to cotton, that it readily receives the rich dyes imparted to the latter, and is, in short, capable of being printed or dyed in a precisely similar manner.

At the Stepney model factory we examined specimens of flannel, felt, and woollen cloth, manufactured of equal parts of British cotton and wool; also, a felt that was composed entirely of the former material. All of those goods had a remarkably stout feel, and appeared to be strong in their body.

Combined with silk British cotton may be worked up with great ease on the existing silk machinery, and when so wrought, is capable of receiving the same colors in dying, and materially adding to the strength of the fabric manufactured.

We saw two other substances, which, it appears, are quite as susceptible of being "cottonized" as flax; one was a coarse species of China silk, at present of little value; the other was "Jute" or Indian hemp. Both of these fibres were materially improved in appearance and feel, and are, no doubt, in their new form, adapted to purposes for which they were not at all available previously.

Looking at this "Flax Movement" in an agricultural point of view, we shall find as many advantages likely to arise from it in that direction as in any other. Hitherto it has been a most prevalent opinion that flax crops were exceedingly exhaustive in their effect upon the soil. Experiments fairly carried out have shown this to be a fallacy. Chemical analysis of the plant, and a series of flax crops taken from the same land, have proved beyond a doubt, that not only does this cultivation not weaken the soil, but tends to keep it in a state of great productiveness.

An examination of the structure of the plant demonstrates that those portions of it which absorb the alkalies and the nutritive properties of the soil, are those which are not required for the purpose of manufacture; namely, the wooden part, the resinous matter, and the seed. The fibres derive their elements almost entirely from the atmosphere, one hundred parts containing not more than two parts of mineral matter. Under the old process of steeping, the nutritive portions contained in the wood and gum, as well as the whole of the seed, were lost in the fermentation during steeping; so that nothing whatever was restored to the land. By the new method, these properties are capable of being returned whence they were taken. The seed may be either employed in feeding cattle, or crushed for oil; the oil cake being in that case returned for the cattle yard.

Estimates, based upon several years of actual experience, go to show that, by this cultivation, the farmer may realize a yearly profit of from fifteen pounds to eighteen pounds the acre, and that, too, upon land which has been just previously heavily cropped in cereals. Many thousands of acres which hitherto have yielded but indifferent and uncertain crops, or which

have scarcely been worth cultivation, may be brought under flax without any fear of the result. Hitherto, the absence of linen manufactures, and the consequent want of markets, in so many parts of England and Scotland, have proved a serious obstacle to any attempts at extending flax culture. But now that every grower may, by the purchase of an inexpensive and simply constructed machine, convert the flax-straw into a fit condition for economical and convenient transport to a market, and now that conveyance is so much lessened in cost, and that the patent process will before long be in active operation in every agricultural county of Great Britain and Ireland, it is to be hoped that a widely extended cultivation of this article may take place, affording active employment to a vast number of persons in all ages.

Already the patent has been taken in hand in Scotland; arrangements are in progress for a similar undertaking in Ireland; and should the like activity be manifested in England, there can be little doubt that two most important results will have been attained—the providing a great portion of our poorer population with good employment, and rendering our manufacturers less dependent upon the United States for the supply of flax and cotton."

THEORY OF MINERAL MANURES.

Messrs. Lawes & Gilbert have published in the Journal of the Royal Agricultural Society, the result of many experiments, made by them in the course of many years to ascertain the correctness of the idea advanced by Liebig that it is only necessary to apply the ashes of plants or mineral substances, for the support of crops. They took plots of ground of equal superfices, and applied different substances to the same crop. In one instance, ground which had no manure, produced sixteen bushels of wheat to the acre; fourteen tons of yard manure produced twenty-two bushels; the ashes of fourteen tons of yard manure, sixteen bushels; mean produce of nine plots supplied with artificial mineral manures, fourteen bushels three and a half pecks; on other plots the addition of sixty-five pounds sulphate of ammonia, (which Liebig held was unnecessary,) gave an average of twenty-one bushels. The increase by the use of the mineral manures recommended by Liebig, was, therefore, less than two bushels per acre, and the increase by ashes of manure nothing.—*Rural New Yorker.*

SEASONABLE RECIPES.

In exchanges we have met with several valuable recipes for remedies of disease generally prevalent, and often dangerous, at this season of the year. This first is from the New York Sun, and introduced by the following editorial remarks of that paper:

CURE FOR DIARRHŒA.—At the request of many readers, we republish the recipe so generally known and appreciated since the summer of 1843, as the "Sun's Remedy," for bowel complaints, incidental to the summer season. To those who are not already aware of the merit of this remedy, we may say that no other prescription was so successful during the cholera season, in checking the dreadful disease when used promptly on the appearance of the first symptoms. We advise our readers to preserve the recipe.

Take equal parts of the tincture of laudanum, tincture of cayenne pepper, treble strength, tincture of rhubarb, essence of peppermint, treble strength, spirits of camphor, mix in a bottle; dose from five to thirty drops, according to the violence of the symptoms. To be repeated every ten or fifteen minutes, if needed, until relief is obtained.

The following recipe will be found exceedingly valuable during the hot months, when there is so much liability to affections of the bowels: Parch half a pint of rice until it is brown; then boil it as rice is usually done. Eat slowly, and it will stop the most alarming cases of diarrhœa.

WEIGHTS AND MEASURES.—The "Western Agriculturist" provides the following table of the number of pounds of various articles to a bushel, which may be of interest to our readers:

Of wheat, sixty pounds.
Of shelled corn, fifty-six pounds.
Of corn on the cob, seventy pounds.
Of rye, fifty-six pounds.
Of oats, thirty-six pounds.
Of barley, forty pounds.
Of potatoes, sixty pounds.
Of bran, twenty pounds.
Of clover seed, sixty pounds.
Of timothy seed, forty-five pounds.
Of flax seed, forty-five pounds.
Of hemp seed, forty-four pounds.
Of buckwheat, fifty-two pounds.
Of blue grass seed, fourteen pounds.
Of castor beans, forty-six pounds.
Of dried peaches, thirty-three pounds.
Of dried apples, twenty-four pounds.
Of onions, fifty-seven pounds.
Of salt, fifty pounds.

THE SOUTHERN PLANTER.

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TIMELY WARNING.

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The National Agricultural Convention met lately in Washington City. The following account of its doings, from the Rural New Yorker, is all that it is necessary to give. Sometime ago we saw it stated by a leading advocate of the Agricultural Bureau that Virginia was the only State in the Union that had manifested any hostility to that institution, which it was the main object of the Convention to establish; but now it appears that "the farmers of the Union, as a class, took but little part in the proceedings." This was as we expected, and wished. It is not the first time that editors have got ahead of their readers, and mistakingly attributed consent to silence. We have been against the bureau all along, first, as *unconstitutional*, if it be not ridiculous to use that term now-a-days; and, secondly, as another means, whether so intended or not, of plundering the office-ridden people of this country, and destined, like the agricultural department of the Patent Office, to be the football of politicians, and promising no more good than that has accomplished, which is little enough in all conscience. We have read all we could find in favor of the project, anxious to see an argument which we could attack, but never a one have our searching eyes been able to discover, much less expose. We rejoice that the humbug has exploded so harmlessly.

NATIONAL AGRICULTURAL CONVENTION.

The National Agricultural Convention, of which we gave some notice last week, seems to have done little for the cause which it was ostensibly called to promote. There were one hundred and fifty-four delegates present from twenty-three of the States, but the farmers as a class, took but little part in the proceedings. The President, Hon. M. P. Wilder, gave an eloquent and appropriate opening address, and, while waiting the organization, other remarks of like character were made by B. P. Johnson, Esq. and Mr. Calhoun of Massachusetts.—The session, which continued two days, was mainly spent in political debate, and all we can learn, that was accomplished, was the formation of a United States Agricultural Society, and the passage of a resolution requesting Congress to do something for the promotion of agriculture, the great productive interest of the country.

The topics of division among the agriculturists were, whether Congress should be asked to establish an independent agricultural department of the government, or whether it

should create such a department in connexion with the Smithsonian Institute, or whether a simple central society would best answer the purposes of the farmers. The business committee made a long report in favor of an agricultural bureau, which was strenuously opposed by a portion of the same committee, who wished for a department of agriculture in connexion with the Smithsonian Institute. The chairman of the committee, Senator Douglas, in support of the last project, remarked: If an agricultural department or bureau were established, it would soon become, like other offices of the government, a place for all politicians, and its occupants would be removable at every change of administration. This would make these men much too anxious about politics to give up their whole thoughts to their official duties, and the consequence would be the breaking down of the whole thing. He proposed that a department of agriculture should be attached to the Smithsonian Institute, and believed that this would be more in accordance with the views of Smithson than the course pursued at present by those in charge of the Institution.

There were now no practical results; abstruse and theoretical subjects were all the professors busied themselves about; and unless this state of affairs were reformed, the Institute would become most odious in the sight of the American people. If it was the wish of the friends of the Smithsonian Institute to make their establishment popular, they must rest it on the great industrial institutions of the country. He wished the Institution to prosecute the sciences, but only with reference to practical results. Let them pay attention to geology, mineralogy and mechanics, but not forget agriculture. The Institution must make itself useful, and not waste its investigations upon the stars and heavenly planets, and other matters which had no practical bearing. This Institution publishes transactions and sends them all over the globe. It receives vast numbers of agricultural reports and documents from all the agricultural societies of the country, but what does it do with them? For want of an agricultural department, there is no exchange of these reports, and they lie accumulating and useless.

Professor Henry, of the Smithsonian Institute, replied in an able speech, explaining and defending the objects of the Institute. He said, the will of Smithson was much misunderstood. His object in making that rich bequest was not an ordinary one; it was not merely useful knowledge, in the general acceptation of the word, that he contemplated the increase and diffusion of, but he had high objects, expanded, and elevated purposes, for he was a man of much acquisition and research. The object of Smithson was not to confine the benefits of his institution to this country only, but to the whole brotherhood of mankind. The people of the United States stand as mere trustees for execution of his will and the proper use of the fund; a fund not intended for ends special to us, but for the universal family of man.

All discoveries must be encouraged, and such an institution as the Smithsonian required encouragement, that it might in the increase of knowledge, aid in adding new facts to science. For the diffusion of knowledge there were thousands of institutions where there was one for its increase, and the Smithsonian Institution is pursuing its true and genuine purpose in keeping that fact in full view. It had already published four quarto volumes, every page of which contained some new addition to knowledge, and these volumes were distributed in every direction. We will, said Professor Henry, co-operate with agricultural societies, and especially with the society now here in process of establishment. The Smithsonian Institution will offer its hall, its books, its apparatus.

We are even now doing much for agriculture. We are preparing an extended report on the forest trees of America; we have published a volume on the seaweeds of America. These things might appear of no practical value or importance, and yet they are of the highest importance.

The second day was spent in debate, Messrs. Holcomb, Robinson, Bell, Douglas and others participating, and the Convention adjourned *sine die*, able only to agree on the resolution above noted. We have not seen any "official" account of the proceedings, but condense our report of the speeches, &c. from the New York Evening Post. We hope there is a brighter side to the picture, and shall present it if there is, but as yet, to use the language of the political press, the whole affair seems "a fizzle," as far as any practical result is concerned, and very like that of the attempts heretofore made by Congress to "do something" for the agricultural interest.

FENCES ON THE BANKS OF STREAMS.

We clip the following from an exchange paper, the Germantown Telegraph. It looks like a promising idea. And it will cost very little to try it. If any one should try it we will be glad to hear the result. We would try it ourselves, but we have no river bank to enclose.

"A fence constructed in the Wissahickon, to prevent the cattle from passing from one bank to the other, was original and ingenious. It consisted of a continuation of poles connected together with short chains, the extreme ends of the united line being made fast to trees on the shore, and the whole floating on the top and made a fixture in the stream by small anchors. Where the water is not less than three feet in depth, this fence has been found to be

a sure protection, having frequently resisted a whole herd of cattle. This simple construction not only effectually restrains the cattle from wandering, and is almost indispensable in bottom lands liable to be overflowed during freshets, but it admits of the cattle using one-half the stream, which is of great advantage to both dairy and stock cattle in warm weather."

JUVENILE.—The youth who cut open the bellows to see where the wind came from, is now trying his hand at fattening greyhounds.

For the Southern Planter.

A SMALL VIRGINIA FARM.

Mr. Editor,—I am often asked what is the amount of my annual sales from my little farm of sixty acres of *cultivated* land. My books show that my sales of last year's produce were as follows:

Wheat, - - - -	$200 00
Corn, - - - -	125 00
Hay, - - - -	60 00
Cows and Beef, - -	50 00
Sheaf Oats, - - -	30 00
Threshed Oats, - -	22 50
Pork, - - - -	21 75
Flour, Bacon, &c. &c. - -	35 00
	$544 25

The produce consumed on the farm by an average family of three white persons (including workmen) and eight servants, who, in the absence of all *domestic* restraint, carry the keys, and eat and feed out what they please, and by the stock, including four horses, must have been worth upwards of seven hundred dollars. The principal items were—

600 bushels of Corn, - -	$360 00
12 barrels of Flour, - -	50 00
2,500 pounds of Pork, - -	125 00
1,000 pounds of Beef, - -	50 00
10 loads of Hay, - -	100 00
Oats, Potatoes, Butter, Poultry, &c.	50 00
	$735 00

Making a gross aggregate product of twelve hundred and seventy-nine dollars from sixty acres of land; being upwards of twenty-one dollars to the acre, which is more than the highest estimated product of the best cultivated farms in England.

By making corn, hay and potatoes my staple crops, and by the liberal use of concentrated manures, I am satisfied that the products of my farm can be *doubled* in the next five years; and as sure as I live I mean to do it. To most of us clodhoppers, the earth we till for our daily bread is a *terra incognita*, whose rich resources are not only undeveloped, but unexplored and undreamt of. Every farmer has a California gold mine beneath his feet, if he only knew how to dig out the precious ore. Well might the Roman clodhopper exclaim

"O fortunatus nimium, sua si bona norint, Agricolas."

O happy clodhoppers, if you only knew how to farm it!

Do, good Mr. Planter, teach us how!

C. C. BALDWIN.

Rockbridge, Virginia.

From Moore's Rural New-Yorker.

BUTTER MAKING.

BY A FARMER'S WIFE.

Editors Rural,—I do not attempt the consideration of this subject in the expectation of adding any new and important facts, but to contribute my "mite" to the general stock of knowledge already gained, and to note down a few plain and simple facts for those who are, or expect to be, dairy-women in a small way. It seems to be a subject that requires "line upon line," to induce people to practise on the principle that good butter can be more profitably made than poor butter.

Something more than twenty years ago, I took upon myself the responsibilities of a farmer's wife, as too many others have done, without an adequate knowledge of its requirements and duties. I thought any one who was cleanly, could make good butter; a process so simple, that *skill* was quite unnecessary. I therefore undertook the management of the milk of ten or twelve cows, with all the confidence of ignorance. A few weeks convinced me that more knowledge and judgment were necessary than I had anticipated, to produce the *very best butter*.

Among my neighbors, was a woman who had been for years a dairy-woman in an extensive dairy in England. An old lady, somewhat fastidious in taste, whom we supplied with butter, observed that she would ensure to us among her friends, two cents a pound above the market price, as soon as my butter should equal Mrs. P.'s, (the woman above alluded to) in quality. Here was a direct appeal to a motive that always responds. I accordingly sought Mrs. P.'s advice. Said she, "Lay down a few plain rules; experience and observation will do the rest.

"Let all milk vessels be perfectly clean, and free from acidity; a good circulation

of pure air, without having the wind blow on the milk; skim the milk before it turns sour, never letting the milk *thicken* with the cream on; churning often enough to prevent the cream from getting very sour; churn *moderately*, work the butter clear of buttermilk, salt with from one to one and a quarter ounces of *fine, sifted* salt, to one pound of fresh butter; let the butter stand twenty-four hours, then mould and prepare your butter for market, and depend on it, you will have a first rate article."

"Do you not have to wash your butter a great deal in warm weather to get out the buttermilk?" I inquired.

"No," said she, "such a practice ruins the butter, it washes out the sweetness; I never allow any water to touch my butter; sometimes I put a piece of ice, or cold spring water in the churn, but I do not like to do even that."

By close observation of these rules, combined with ambition to excel, and get the highest prices before the first season was over, I succeeded in bringing my butter to the required standard. I still thought Mrs. P. rather whimsical in her opposition to washing butter, and could not help accusing her of a little obstinacy. I at length became convinced that she was right. I then knew nothing of the chemical process by which the sweetness was washed out of the butter, but such I found to be the fact. I found, too, that the use of water injured the butter for keeping. By repeated experiments, it was found that of two jars of butter treated precisely alike, excepting that one was washed and the other unwashed, after being kept through the winter, the unwashed would invariably prove to be the best. Chemical analysis has repeatedly shown that the sugar which forms an ingredient in all milk and cream, is dissolved and lost in the water, thereby detracting from that delicious sweetness that all butter should possess.

I know that a small farmer who keeps but two or three cows cannot always command the advantages of more extended means. But if two cows only are kept, it is quite as important to the owner that they should be good ones, and yield good butter in proportion to the money invested, as it would be if he were able to keep twenty. There are very few situations, where sufficient accommodations cannot be obtained, by a small outlay of what the Yankees call "contrivance," to enable a careful, observing woman, to make the very best butter. I can see no good reason why so much poor butter is made and carried to market, when a little more care and attention would produce an article that any woman might be proud to call her work.

It is so much more *convenient*, too, to supply individual families, and take the money for your butter, than to have that which you are obliged to solicit grocers to buy, and then be paid in their goods, at their own prices.

I am much inclined to think that what we have gained in *time*, by the introduction of churns that will produce butter with five or ten minutes labor, has been overbalanced by loss in *quality* and *quantity*. I have used "Gault's Churn," but will not say there is none better, but with that I have found *rapid* churning would always injure the quality of the butter. As to what is denominated *cooking butter*, which is but another name for rancid, worthless stuff, such an article should never be used in any kind of food, as all experience shows that it is decidedly unwholesome, and spoils the taste of anything in which it becomes an ingredient. If by accident or from other causes, butter becomes rancid, consign it to the receptacle for "soap grease," and enter the amount on the page of "losses."

When a good spring of water can be commanded, a very little expense will make it a valuable auxilliary in the making of good butter. Here I would say a few words about vessels in which to set milk. If the arrangements allow of setting the pans in running water, I prefer the stone crocks of the potteries, perfectly glazed, made a little larger at the top than at the bottom. The only reason why they are preferable to tin, is the liability of the latter to rust, from continual contact with the water. In all other situations, I believe tin is the best of any thing we can at present use, both on account of cleanliness and economy. I presume at some future time, glass will come into use for that purpose, and there is no doubt it is better for milk pans than any other material, or will be, when it can be manufactured sufficiently cheap and strong. A few years ago, when zinc was highly recommended for milk pans, my husband was desirous that I should give them a trial; I did so, and directly found that the least acidity would decompose enough of the zinc to color that portion of the milk that settled at the bottom when the milk began to sour, rendering them wholly unfit for the purpose.

Many persons complain of being unable to make yellow butter in winter. Some

cows will yield yellow butter at all seasons, others not at any season; much, however, depends upon the kind of food given to the cow. I think the freezing of milk takes the color out, and injures the butter. I prefer setting milk where it will not freeze till the cream has all risen; next to that, I like the practice of scalding the milk till the minute bubbles begin to rise from the bottom of the pan, then let it stand from twelve to eighteen hours, when the cream will be *all* at the top in a rich mass that may be cut; hence the name, "clotted cream," which always yields a large quantity of butter in proportion to its bulk, with a very little churning. I have seen a bowl of this cream converted into butter by stirring with a common table spoon in three minutes. The butter has a peculiar sweetness, and the cream is considered a great delicacy, particularly among English people, eaten with fruit at dessert.

Any desired shade of yellow can be given to winter butter without in the least injuring the flavor, by grating an Altringham carrot into a little milk and straining into the cream. I mention this kind of carrot because it is higher colored, and consequently less of the juice is required. A little practice must regulate the quantity. The yolk of a fresh egg, well beaten, to two quarts of cream, will produce the same result.

Since writing the above, I have been looking over an article for the "dairy," in a recent number of the Boston Cultivator, and find some interesting remarks made before a Council of the Royal Agricultural Society, by a gentleman who kept an extensive dairy in Holstein. I find his practice so well agrees with my own ideas of proper dairy management, that I send you the remarks for publication, if you think proper.* His dairy is much like that recommended in the plan of a "Farm Cottage," which took the premium of the New York State Agricultural Society in 1848, and since published in the RURAL, of October 10, 1850.

Willow-Dell Farm, June, 1852.

* The article referred to, will appear in our next number, headed "A Holstein Dairy."—EDITOR SOUTHERN PLANTER.

ATTENTION TO ROOT CROPS.—Keep your root crops clean from weeds and grass, and the soil open to the fertilizing influences of the atmosphere.

From the Genesee Farmer.

APPLICATION OF FERTILIZERS TO GARDENS.

Those who are in the habit of perusing the agricultural and horticultural journals, must have observed that every year, and indeed every month, the subject of preparing and applying fertilizers of the soil, assumes more and more importance. In all the older States the primitive fertility of the soil is becoming exhausted, and people are finding out in the declining produce of their fields and gardens, that they must either apply manures or move farther back. Twelve years ago, in the city of Rochester, manure—good stable manure—could be had in abundance for nothing. Thousands of loads were annually emptied into the river. Now it commands twenty-five cents a two-horse wagon load at least; and that in a fresh, rough state, as it comes from the stable floor. Every year it grows dearer and scarcer, although the land has not increased, while the quantity of manure produced annually has more than quadrupled.

This shows the growing importance of manure here; and it is so in other places. Patent manure and poudrette companies, and searches after fertilizers in the bowels of the earth, are all so many proofs that we are no longer ignorant of the value of manures; and proofs, too, that a better system of culture is rapidly gaining ground. It is a fact that every man who cultivates a field, an orchard, or a garden, should remember well, that to be successful, he must understand the making as well as the application of fertilizers. Without it he can not produce a remunerating crop on his farm, nor fine fruits or flowers in his garden. Our object at this time is not to discuss the subject in a general way, but to point out now, at the commencement of the growing season, a mode of fertilizing more particularly applicable to the garden, although in other countries practised extensively on farms, as will presently be seen.

It is well known that manure, before it is in a proper condition to be taken up by the roots of plants, must be in a state of solution. When solid barn-yard manure is applied, it remains ineffective until the moisture of the ground and rains dissolve it. But in this country we often have dry summers, during which manures often remain solid during the whole season of growth, and turn up in the autumn almost

as fresh as when turned in; the plants, meantime, starved. In such a climate it is evident that old, well decayed manure, will be most effectual; and if in a liquid state better still, in all cases where we wish a rapid and luxuriant growth, as in the case with most garden vegetables and other annual plants. It supplies the place of both rain and manure—essentials of good growth. The liquid manure tank will become an indispensable adjunct to every American garden. The subject is attracting great attention even in the rainy climate of England, and we extract the following from a late number of the Gardener's Chronicle, offering some important suggestions in regard to the proper mode, and proper periods in growth, of applying it to the best advantage:

"The great importance of the liquid manure question, and the numerous inquiries made of us as to the application of this fluid, lead us once more to resume the subject, restricting ourselves on the present occasion to a single point, namely, the period in the growth of a plant when it may be most advantageously applied, or should be altogether withheld.

"In order to understand this part of the question it must be borne in mind—first, that liquid manure is an agent ready for immediate use—its main value depending upon that quality; second, that its effect is to produce exuberant growth; and third, that it will continue to do so as long as the temperature and light required for its action are sufficient. These three propositions, rightly understood, point to the true principles of applying it; and if they are kept in view, no mistakes can well be made. They render it evident that the period in the growth of a plant, at which it should be applied, depends entirely upon the nature of the plant, and the object to be gained.

"If, for example, wood and leaves are all that the cultivator desires to obtain, it will be evident that liquid manure may be used freely from the time when buds first break, until it is necessary that the process of ripening the wood shall begin. Wood can not ripen so long as it is growing; wood will continue to grow as long as leaves form, and its rate of growth will be in direct proportion to their rate of development; therefore, to ripen wood, growth must be arrested. But the growth of wood will not be arrested so long as liquid manure continues to be applied, except in the presence of a temperature low enough to injure or destroy it. Hence it is obvious that liquid manure must be withheld from plants grown for their wood and leaves, at the latest, by the time when two-thirds of the season shall have elapsed. To administer it in such cases towards the end of the year, would be to produce upon it an effect similar to that caused by a warm, wet autumn, when even hardy trees are damaged by the earliest frost.

"In the case of flowers, it is to be remembered that the more leaves a plant forms, the fewer blossoms in that season; although perhaps the more in a succeeding season, provided exuberance is then arrested.—The application of liquid manure is therefore unfavorable to the immediate production of flowers. It is further to be remarked, that even although flowers shall have arrived at a rudimentary state, at a time when this fluid is applied, and that therefore their number cannot be diminished, yet that the effect of exuberance is notoriously to cause deformity; petals become distorted, the colored parts become green, and leaves take the place of the floral organs, as we so often see with roses grown with strong, rank manure. In improving the quality of flowers, liquid manure is therefore a dangerous ingredient; nevertheless its action is most important, if it is rightly given. The true period of applying it, with a view to heighten the beauty of flowers, is undoubtedly when their buds are large enough to show that the elementary organization is completed, and therefore beyond the reach of derangement. If the floral apparatus has once taken upon itself the natural condition, no exuberance will afterwards affect it; the parts which are small will simply grow larger, and acquire brighter colors; for those changes in flowers which cause monstrous development, appear to take effect only when the organs are in a nascent state—at the very moment of their birth. Hence it is clear, that in order to affect flowers advantageously by liquid manure, it should be given to plants at the time when the flower bud is formed and just about to swell more rapidly.

"With fruit it is different; the period of application should there be when the fruit, not the flowers, are beginning to swell. Nothing is gained by influencing the size or color of the flower of a fruit tree; what we want is to increase the size or abundance of the fruit. If liquid manure is applied to a plant when the flowers are growing, the vigor which it communicates to them must also be communicated to the

leaves; but when leaves are growing unusually fast, there is sometimes a danger that they may rob the branches of the sap required for the nutrition of the fruit; and if that happens, the latter falls off. Here, then, is a source of danger which must not be lost sight of. No doubt, the proper time for using liquid manure is when the fruit is beginning to swell and has acquired, by means of its own green surface, a power of suction capable of opposing that of the leaves. At that time liquid manure may be applied freely, and continued, from time to time, as long as the fruit is growing. But at the first sign of ripening, or even earlier, it should be wholly withheld. The ripening process consists in certain changes which the constituents of the fruit and surrounding leaves undergo; it is a new elaboration, which can only be interfered with by the continual introduction of crude matters, such as liquid manure will supply. We all know that when ripening has once begun, even water spoils the quality of the fruit, although it augments the size; as is sufficiently shown by the strawberries prepared for the London market, by daily irrigation. Great additional size is obtained, but it is at the expense of flavor; and any injury which mere water may produce, will certainly not be diminished by water holding ammoniacal and saline substances in solution.

"Root crops stand in a different position to any of the foregoing. They are most analogous to the first of the above cases; for their roots may be compared to wood, of which they are equivalents. But there is this important difference, that whereas the quantity of wood is in direct proportion to the quantity of leaves, the reverse is the case with root crops. The turnip that throws up an enormous tuft of leaves, has a very small bulb; and so of the carrot. In these plants the root is formed by the leaves; but only when they themselves cease growing vigorously. The true object is to obtain plenty of foliage early enough to afford time for the after formation of the root. This is what happens under ordinary circumstances. The leaves grow rapidly during the warm weather of early autumn; but when the temperature falls, their own development is languid, and all their energy is expended in augmenting the mass below them. We entertain little doubt that by the constant application of liquid manure, a turnip might be absolutely prevented from forming more root than a cabbage. In root crops, what is wanted is an abundant supply of liquid manure when the leaves are forming, so as to secure early a large and vigorous foliage; after which no liquid manure whatever ought to be applied. This is quite consistent with the evidence collected by Mr. Dudly Fortesqu, and published in the minutes of the board of health, to which we have so often, of late, had occasion to refer. Speaking of Mr. Kennedy's farm, in Ayrshire, this gentleman says: 'Of the turnips, one lot of Swedes, dressed with ten tons of solid farm manure and about two thousand gallons of the liquid, having six bushels of dissolved bones along with it, was ready for hoeing ten or twelve days earlier than another lot dressed with double the amount of solid manure without the liquid application, and were fully equal to those in a neighbor's field which had received thirty loads of farm-yard dung, together with three hundred weight of guano and sixteen bushels of bones per acre. The yield was estimated at forty tons the Scotch acre, and their great luxuriance seemed to me to justify the expectation. From one field of White Globe turnips, sown later, and manured solely with liquid, from forty to fifty tons to the Scotch acre were expected. A field of carrots treated in the same manner as the Swedes, to which a second application of liquid was given just before thinning, promises from twenty-six to twenty-five tons the acre.'

"Such we believe to be the principles that should regulate the periods of growth at which liquid manure ought to be given to plants. Those principles are founded upon what appear to be the natural requirements of vegetation—are consistent with all at present known of the subject; and seem to account satisfactorily for many of the failures that are said to have attended the application of this agent. Let us add, however, that they are fair subjects of discussion, and will be all the better understood if subjected to rational criticism. We should therefore be happy to receive the opinions of any correspondents whose experience enables them to coincide with, or to differ from us, in this most important matter."

Peach trees should be carefully examined about the roots at this time, and a sharp knife used to clear away all gum, grubs and dead bark. Wash with soft soap and soot, and draw the earth up around the tree in a small hillock.—*Mass. Ploughman.*

For the Southern Planter.

VIRGINIA STATE AGRICULTURAL SOCIETY.

The Executive Committee met at the call of the President, at the Exchange Hotel in the city of Richmond, on Friday evening the 16th of July, 1852, at 4 o'clock, P. M.

Present: E. Ruffin, President; William H. Richardson, member of Committee; B. Peyton, Treasurer; Frank: G. Ruffin, Corresponding Secretary; Charles B. Williams, Recording Secretary.

Mr. E. Ruffin, from the Committee appointed for that purpose, reported the draft of a circular letter and list of queries to be addressed to Farmers throughout the State, with the view of obtaining from them important information of a practical nature on various subjects connected with agriculture; which report was adopted, and thereupon the Committee came to the following resolution:

Resolved, That the Recording Secretary have the said circular and queries published in the Southern Planter, and have five hundred separate copies printed and directed to suitable persons in the various counties of Virginia.

Resolved, That Messrs. Frank: G. Ruffin, Hill Carter and Thomas J. Randolph be appointed a committee to prepare an address to the people of Virginia, urging the support of the State Agricultural Society; and also, a petition for general subscription, praying the Legislature of Virginia for aid to agriculture.

The following resolution was proposed for adoption, which was, on motion, laid upon the table:

Resolved, That a Standing Committee of Publication be appointed, whose duty it shall be to examine all communications and essays addressed to the Society which may be referred to them, and to prepare such of them for publication as they may deem proper to be adopted for that purpose.

The following essays were received and ordered to be referred to the Committee on Publication:

"New views of the theory and laws of rotation of crops, and their practical application."

"The profitable improvement of poor land, either mainly or entirely from its own resources."

Resolved, That the first annual meeting of the Society be held on Thursday the 16th day of December next, in the city of Richmond.

Premium for Analyses of Marl, &c.

A complete set of the "Farmers' Register," ten volumes, (well bound in calf, and lettered suitably to the distinction,) is offered by Edmund Ruffin, through the Virginia State Agricultural Society, and will be awarded in 1853, by the Society, under the general regulation and procedure in regard to premiums, for the following scientific aid to agricultural practice and improvement:

The most valuable series of analyses, conducted by, or under the particular direction of any one chemist, of different kinds of marl of lower Virginia, or of the accompanying beds of other earths, supposed to contain manuring ingredients.

In deciding upon the relative superiority of claims of competitors for this offered premium, regard will be had to the number of analyses, the diversity and importance of the particular subjects, the accuracy of the methods used and described, the proper direction of investigation, and especially the probable utility and benefit of the results, in their application to agricultural practice, and improvement of soils.

It is to be understood that the award of this premium shall not invalidate or lessen any claim which the receiver might otherwise properly present upon some of the same grounds, for any other premium offered by the State Agricultural Society, on subjects of scientific investigation, useful discovery, or of communications thereupon.

In accordance with an invitation from the Farmers' Club of the county of Nottoway, it was resolved to adjourn to meet at Blacks & Whites, in said county, on Friday next, the 23d instant.

E. RUFFIN, *President.*

CHAS. B. WILLIAMS, *Rec. Secretary.*

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CIRCULAR.

Letter from the Executive Committee of the State Agricultural Society to the Farmers of Virginia.

SIR,—The all-important and indispensable means for the Virginia State Agricultural Society to produce much benefit to agriculture, will be found in the collecting the useful facts or instructive opinions which are known to numerous individual farmers—and the embodying of such information, and then diffusing it for the use of the agricultural community of Virginia. To perform this service, the most valuable of all the designed services and operations of the State Society, there will be required written communications from many farmers; and without that aid nothing can be done in this important respect. With such aid, rendered freely, fully and zealously, the Society can and will do every thing for its great objects, that can be looked for from any such association.

The Executive Committee respectfully ask and hope for your individual aid and co-operation in this particular direction—and, through your influence, the aid of as many other farmers of your county or acquaintance, as may, both by their public spirit and their enlightened self-interest, be induced to thus co-operate. Without regard to the particular names to which copies of this circular letter will be di-

rected, (which of necessity must be few, and mostly selected without personal acquaintance,) it is hoped that every farmer who has any useful information to give to his fellow-laborers, will communicate it for public and general benefit, as now requested, through the State Agricultural Society.

The annexed list of queries is submitted merely to suggest some of the numerous useful subjects for communications, and not to confine to these the range of communications. There are numerous other subjects as well deserving consideration, and upon which information would be useful; and communications on any and every subject within the wide bounds of farming practice, will be acceptable to the Society, and valuable to the great agricultural community. All such answers to this letter, or like communications of useful facts or opinions, in whatever form communicated, will be digested and embodied, and extensively diffused through the publications of the State Society.

Those persons who may treat of subjects requiring extended discussion, and whose communications will take the form of essays, will thereby still more effectively serve the Society and the public. The publication of such communications will not be postponed by the Executive Committee to the general meeting of the Society; but, after being duly scrutinized and approved, will be placed before the public in the Southern Planter and other available channels. Should any essays, or the subjects of any written communications, be such as properly to compete for any premiums offered by or through the Society, their claims to such premiums at a later time shall not be invalidated or affected by the prior reception and publication.

Communications for the Executive Committee, of agricultural information, if forwarded by mail, should be directed to the Corresponding Secretary.

For the Executive Committee of the State Agricultural Society,

FRANK: G. RUFFIN,
Cor. Secretary.

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SUBJECTS

Suggested for Communications in writing to the State Agricultural Society of Virginia.

Agricultural reports, in detail, of any particular county, smaller division, or even single farm, and the farming practice thereof, offering subjects of interesting and instructive agricultural information.

Descriptions of new or improved practices or processes, manures, or implements.

Descriptions of any actual operations serving for useful examples, in clearing, fencing or enclosing land, manuring, draining, cultivation of particular crops, breeding, rearing, feeding and fattening of animals—or any other farming labors and investments.

Economical methods and practices, of tried benefit, for increasing supplies of farm-made manures—and discoveries or trials of mineral or other materials for manures in new localities.

Preparing, preserving and applying ordinary putrescent manures from stables and stock yards, &c. of farms.

Composted and mixed manures—modes of preparing and applying—costs and benefits.

Uses and effects as manure of alluvial or other earth, rich in mineral or organic matters, or mud of swamps, marshes, ponds or rivers.

Leaves raked from wood-land, as manure.

Estimates of costs, products and profits of purchased manures of all kinds.

Statements of costs, profits and other results (and especially in regard to difference of health,) of any particular operations of laying dry and cultivating former sites of mill-ponds, and substituting canals to supply water power to the mills.

Description of good points to be observed in the selection of milch cows, and particularly as to what is known in regard to the Guenon theory in relation thereto.

Remarks on dairy husbandry, and the mode of getting milk and butter to market.

On various modes of curing tobacco, such as the difference between curing the same kind in the shade or house without fire; in the house with fire; and partially in the sun; and afterwards in the house with, and without fire.

On the advantage or disadvantage of using salt in curing tobacco.

On the efficacy of salt in destroying worms in the soil; its beneficial effects used as manure, and the quantity to be applied under various circumstances.

On the mode of raising and curing hay from corn sowed or drilled, and value of it as compared with timothy, clover and herdsgrass hay.

On the character, habits and various stages of predatory insects, such as joint-worm, army-worm, Hessian fly, &c. and the best methods of preventing their ravages upon crops.

We call particular attention to the Address of the Farmer's Club of Nottoway on the Enclosure System. It is a strong document, and speaks for itself. We had intended to have made some few remarks on the subject, but have no time. Nor do we conceive it very necessary.

JACKSON SPONGE CAKE.—Take one cup of flour, one cup of sugar, three eggs and one tea-spoonful of cream tartar, stir them well together, then dissolve one-fourth of a tea-spoonful of salæratus in a table-spoonful of hot water, add to the cake, stir briskly and bake half an hour.—*Michigan Farmer.*

SEED WHEAT.

Garland Hanes, Esq. of Henrico, has left at our office samples of very fine white wheat, raised on his farm, which he wishes to dispose of for seed. It is represented as a very prolific variety—the grains being very plump and heavy. See his advertisement in another column.

James T. Redd, Esq. of Caroline, has also left with us some fine specimens of wheat, raised by him, known as the "Mammoth" and "Bald Head" varieties.

Farmers visiting the city can see them at our office.

How to Kill Ants.—An Irish journal states the following as a fact. A vessel containing the water in which *prunes* had been stewed, had been placed in a cupboard, which was infested with these insects, and on being looked at a few days after, all the liquid had disappeared, and in its place was a compact mass of dead ants, weighing more than two pounds.—The trouble of boiling prunes, for this purpose might be saved, by purchasing three pence worth of treacle.

To Prevent Bots in Horses.—A person of much experience in veterinary science is never troubled with this disease in his horses. His simple practice during the fall months, is to keep a greasy cloth in the stable, and once a week rub with it such parts of the animals as may have been attacked by the nit-fly. Grease destroys and prevents the eggs from hatching.

For Cattle and Horses.—Mix occasionally one part of salt with four parts of wood ashes, and give the mixture to different kinds of stock, summer and winter. It promotes their appetites and tends to keep them in a healthy condition. It is said to be good against bots in horses, murrain in cattle, and rot in sheep.

To Make Hens Lay.—The "South Carolinian" says a neighbor states that hog's lard is the best thing he can find to mix the dough he gives to his hens. He says that one cut of this fat, as large as a walnut, will set a hen to laying immediately after she has been broken up from setting, and that, by feeding them with the fat occasionally, his hens continue laying through the whole winter. This is worth trying, at least.

PAYMENTS TO THE SOUTHERN PLANTER,

From July 1st, to July 23d, 1852.

George Payne, to January, 1853,	$2 00
Leroy C. Timberlake, to January, 1853,	1 00
W. C. Jones, to January, 1853,	4 00
L. H. Knight, to July, 1853,	1 00
William J. Carpenter, to Jan. 1853,	4 00
Judge John Robertson, to July, 1852,	4 50
Col. J. Chowning, to January, 1853,	1 00
O. H. Chalkley, to July, 1852,	1 00
G. P. Chalkley, to July, 1853,	1 00
R. F. Hannon, to January, 1853,	1 00
Edward Porter, to January, 1853,	1 00
Josiah Collins, to July, 1854,	4 00
Richard Irby, to July, 1853,	1 00
William Irby, to July, 1853,	1 00
G. N. Seay, to July, 1853,	1 00
Dr. A. A. Campbell, to July, 1854,	2 00
Edmund J. Thompson, to January, 1853,	1 00
William F. Leake, to January, 1853,	1 00
Thomas H. Perkins, to January, 1853,	1 00
John W. White, to July, 1853,	1 00
Peter White, to July, 1852,	1 00
John T. Childrey, to January, 1853,	1 00
Charles A. Robertson, to July, 1853,	2 00
J. S. Nicholas, to January, 1853,	7 00
S. C. Harper, to July, 1853,	1 00
William A. Temple, to January, 1853,	2 00
Thomas Wright, May, 1853,	1 00
David E. Sharp, to July, 1853,	1 00
George S. Blakey, to July, 1853,	1 00
Dr. J. Claiborne, to March, 1853,	1 00
O. White, to January, 1853,	1 00
C. C. Snow, to January, 1853,	1 00
William D. Wallace, to January, 1853,	1 00
Thomas J. Wallace, to January, 1853,	1 00
Albert G. Curtis, January, 1853,	1 00
John S. L. Slocum, to January, 1853,	1 00
William Barrett, to January, 1853,	1 00
Thornton Moore, to January, 1853,	1 00
George Sampson, to January, 1853,	1 00
Richard Sampson, to January, 1853,	1 00
Thomas Gaskins, to January, 1853,	1 00
Dr. A. P. Strother, to January. 1854,	2 00
James E. Anderson, to July, 1853,	1 00
A. B. Fitzgerald, to July, 1853,	1 00
Benjamin H. Stamps, to July, 1853,	1 00
William Grimes, to January. 1853,	1 00
Elijah B. Wood, to July 1853,	1 00
J. D. Massenburg, to January, 1853,	1 00
J. E. Gillet, to May, 1853,	1 00
Warren Edwards, to May, 1853,	1 00
G. H. Crank, to September, 1852,	1 00
Dr. D. B. Roy, to January, 1853,	1 00
Dr. G. Field, to January, 1853,	6 00
Thomas Plummer, to April, 1853,	1 00
Joseph L. Jones, to April, 1853,	1 00
William L. Brodie, to April, 1853,	1 00
James T. Pope, to April, 1853,	1 00
Dr. Stephen Davis, to April, 1853,	1 00
W. A. Kearney, to April, 1853,	1 00
Dr. A. B. Hawkins, to April, 1853,	1 00
Maj. H. W. Eaton, to April, 1853,	1 00
John H. Lee, to April, 1853,	1 00
Peter M'Gee, to July, 1853,	1 00

S. C. Sneed, to July, 1853,	$2 00
B. L. Johnson, to July, 1852,	1 00
E. W. Hubard, to January, 1852,	1 00
B. M. Wailes, to September, 1852,	1 00
John Massie, to January, 1853,	1 00
John B. Lasley, to July, 1853,	1 00
Col. William Crawford, to Jan. 1853,	1 00
A. F. Butler, to January, 1853,	1 00
Isaac A. Paul, to May, 1853,	1 00
W. C. Lumsden, to May, 1853,	1 00
John L. Morris, to May, 1853,	1 00
J. R. Shiplett, to May, 1853,	1 00
James Eastham, to May, 1853,	1 00
Dr. G. W. Kemper, to January, 1853,	1 00
W. T. Parrott, to January, 1853,	1 00
James M. Harris, to January, 1853,	3 00
I. de Vlaming, to January, 1853,	1 00
R. B. Hendrick, to January, 1853,	1 00
Mrs. Eliza M'Donald, to July, 1853,	1 00
William Gamble, to September, 1853.	1 00
James H. Fitzgerald, to January, 1853,	3 00
William Meredith, to July, 1853,	1 00
J. L. Dawson, to July, 1853,	1 00
W. A. Yager, to June, 1853,	1 00
James M. Jackson, to May, 1853,	1 00
Ro. S. Mills, to July, 1853,	1 00
William M. Jones, to January, 1853,	3 00
Dr. M. Page, to July, 1853,	1 00
Robert Snapp, to July, 1853,	1 00
William Frazier, to July, 1853,	1 00
George Hocker, to January, 1853,	1 00
Edwin Steger, to September, 1852,	1 00
P. B. Jones, to July, 1853,	1 00
T. S. Major, to January, 1852,	1 00
Edmund Henshaw, to July, 1853,	1 00
William M. Shepherd, to Sept. 1852,	
H. R. Holland, to June, 1853,	
Thomas A. Hughes, to June, 1853,	5 00
Frederick Erney, to June, 1853,	
H. W. Baskett, to June, 1853,	
Robert Kent, Sr. to June, 1853,	
G. R. Gibbons, to July, 1853,	1 00
Ambrose P. Hill, to June, 1853,	1 00
William Major, to June, 1853,	1 00
William B. Ross, to June, 1853,	1 00
R. H. Cunningham, to June, 1853,	1 00
Dr. D. S. Green, to September, 1854,	2 00
S. S. Bradford, to June, 1853,	1 00
Charles Yager, to June, 1853,	1 00
James Collins, to June, 1853,	1 00
John H. Rixey, to June, 1853,	1 00
John Vaughan, to June, 1853,	1 00
George M. Wood, to June, 1853,	1 00
Dr. R. K. Long, to June, 1853,	1 00
Dr. A. Taliaferro, to June, 1853,	1 00
John Wharton, to June, 1853,	1 00
Benjamin Farish, to June, 1853,	1 00
Edward Lightfoot, to June, 1853,	1 00
William T. Humphreys, to June, 1853,	1 00
Maj. R. C. Brown, to June, 1853,	1 00
Jeremiah Morton, to June, 1853,	1 00
C. C. Beckham, to June, 1853,	1 00
John N. Griffin, to June, 1853,	1 00
J. W. Hudson, to June, 1853,	1 00
C. P. Crutcher, to June, 1853,	1 00
George Ficklin, to June, 1853,	1 00
Col. Pickett Withers, to June, 1853,	1 00
Col. Robinson Coons, to June, 1853,	$1 00
James Wager, to June, 1853,	1 00
William A. Bowen, to June, 1853,	1 00
Thomas W. Jones, to June, 1853,	1 00
W. S. Coons, to June, 1853,	1 00
William D. Field, to June, 1853,	1 00
Capt. Ed. Beale, to June, 1853,	1 00
George Pannill, Jr. to June, 1853,	1 00
Thomas G. Gibson, to June, 1853,	1 00
Albert Thomas, to June, 1853,	1 00
W. O'Bannon, to January, 1852,	1 00
James F. Brown, to June, 1853,	1 00
Morgan Wood, to June, 1853,	1 00
John S. Parks, to June, 1853,	1 00
William S. Wallis, to June, 1853,	1 00
L. H. Taliaferro, to June, 1853,	1 00
Philip Mallory, to June, 1853,	1 00
William Rixey, to June, 1853,	1 00
Rev. Barnet Grimsley, to June, 1853,	1 00
G. J. Kelly, to January, 1854,	2 00
Gen. J. B. Harvie, to July, 1853,	1 00

PROPOSAL FOR PUBLISHING

THE TRANSACTIONS

OF THE

VIRGINIA STATE AGRICULTURAL SOCIETY.

THE undersigned proposes, if sufficiently encouraged, to publish the "TRANSACTIONS" of the Virginia State Agricultural Society. They will form a volume of 384 large octavo pages, uniform with the Southern Planter, and will be furnished to members of the State Society at the exceedingly low price of THIRTY CENTS PER VOLUME, and to others at ONE DOLLAR PER VOLUME—invariably in advance.

The "Transactions" will consist of all such proceedings and papers of the Society and of the Executive Committee as may be ordered to be published—and which, it may be presumed in advance, will include many original Essays and Discussions of Agricultural subjects, and Reports of Experiments, scientific and practical, of Farm Practices, together with Results of Operations in Farming in all its branches, carefully digested and embodied by the Publication Committee of the State Agricultural Society. The matter, for much the greater part, being furnished by Virginia farmers, the "Transactions" may be expected to contain a larger and more valuable collection of facts and experience, *suitable to the wants of our State*, than has ever before been presented to the public.

It is, perhaps, proper to say, that this matter will be first given to the public through the medium of the Southern Planter, from which it will be re-published, as proposed above.

☞ Persons who desire to subscribe will please send their names immediately, stating at the same time whether they are members of the State Society.

P. D. BERNARD.

Richmond, July 21, 1852.

SEED WHEAT.

I HAVE for sale about four hundred bushels of wheat which I improved from a small portion of the Moravian wheat. The grain is large and white; the heads are very large, some of them upwards of six inches. It produced upwards of forty bushels to the acre last year on a common piece of land, without guano. I send you, Mr. Editor, a sample of the wheat in the ears, which you will please to show to those who wish to examine them. The price of the wheat is one dollar and fifty cents per bushel. Orders left with Dabney & Hanes, Broad street, No. 146, opposite the Richmond Theatre, will be promptly attended to.

au—1t* GARLAND HANES.

VIRGINIA LAND FOR SALE.

A NUMBER of tracts, lying in the counties around Lynchburg, and varying from one hundred to two thousand acres. These lands contain a fine close red subsoil, and can be brought to any state of fertility that the cultivator may wish. Prices from three to fifteen dollars per acre, very near town; and more distant, several large tracts of mountain land, at prices from fifty cents to two dollars per acre.

BENJ'N WILKES,
au—1t* Land Agent.

LIVINGSTON COUNTY PLOUGH.

THE subscriber having greatly increased his facilities for manufacturing the above Ploughs, will be able to supply orders for Ploughs or Castings on a larger scale of the following numbers and sizes:

No. 1. One Horse Plough
No. 2. Light 2 Horse Plough
No. 2½. " " " " } Right Hand.
No. 3. Heavy " " "
No. 4. Three Horse Plough

No. 4. Heavy 2 Horse Plough
No. 5. Three Horse Plough
No. 6. Four Horse Plough; but generally used for 3 horses. } Left Hand.

These Ploughs are now displacing all others in many counties in Virginia. They are composed entirely of cast iron, with *chilled points*, &c. From the simplicity of their construction, and the ease with which they are kept in order, they are peculiarly adapted to lave labor.

Persons desirous of further information concerning these ploughs are referred to the following gentlemen, who now have them in use:
Wm. A. Woods, Esq Charlotte County,
G. S. Harper, Esq. Appamattox County,
David Anderson, Jr. Louisa County,
F. G. Ruffin, Wm. Garth and P. H. Goodloe, Esqrs Albemarle County, Virginia.
Persons disposed to deal in the *Livingston County Plough*, in neighborhoods where they are not already introduced, and on sale, will please address

M. BRYAN,
Steel's Tavern, Augusta Co. Va.
ap—tf

DEVON BULLS FOR SALE.

THE subscribers, having lately entered upon the business of Breeding Devon Cattle, now, for the first time, offer for sale some of their Bull Calves. Their stock is all recently imported from the celebrated herds of Messrs. George Turner and James Quartly, Devonshire, England, who are well known as the first breeders of Devons in the world; and being in no way related to the older importations into this country, their bulls will afford a good opportunity for crossing the old stocks.

Those we now offer are *Uncas* and *Keokuk*; the first, calved March 19th, 1851—the other, February 17th, 1852; their pedigree is the same, viz: sire, "Megunticook," grandsire, "Prince Albert," dam, "Non-Pareille," by "Lord Lynedock." "Megunticook" won the first prize at the American Institute in 1850, and at the New York State Show in 1851.—"Non-Pareille" won the first prize at Barnstable, Devonshire, in 1846, and at the New York State Show in 1851. "Prince Albert" and "Lord Lynedock" were both favorite prize bulls of Mr. Quartly. Also "*Red Jacket*, calved May 5th, 1852; sire, "Megunticook," dam, "Meadow Lilly," by "Baronet," grand dam, "Helena," bred by Mr. James Quartly.—"Baronet" has won four first prizes, including that at the Royal Agricultural Society's Show, at Norwich, England, in 1849.

Several animals from our herd will be exhibited at the New York State Show, to be held at Utica in September next, and at the American Institute in October. They may all be seen at any time on our place, two miles north of Rhinebeck Landing, on the Hudson river. (As yet we have not any heifers for sale.)

W. P. & C. S. WAINWRIGHT.
Rhinebeck, Duchess county, N. Y.
je—3t

PILKINGTON'S OR LUCK'S IMPROVED PATENT SMUT MACHINE.

THIS Machine has proved itself to be one of unrivalled excellence. It is warranted to answer every purpose of the most complete and expensive machinery of screens, rubbing stones, fans, &c. and will thoroughly clean the most smutty wheat. It is the best contrivance to take out chess, onions, and heavy grit, that has ever been used by millers. This machine is provided with self-acting oil feeders to the journals, and requires to be oiled but once a week. It wholly does away with the small fan. It runs at the rate of one thousand revolutions per minute, requiring but little power. We have sold a large number of these machines, and they have in every case given entire satisfaction. Price $60.

A. B. ALLEN & CO.
New York Agricultural Warehouse, 189 and 191 Water street, New York.
June, 1852—3t

DeBow's Industrial Resources

AND PROGRESS OF THE SOUTHERN AND WESTERN STATES, in three large and closely printed volumes, small type, double columns; handsome print, paper and binding,—being a digest and abridgement of the 12 volumes of DeBow's Review. Price $10, or $3 33 per volume.

Desirous of supplying the large and continually increasing demand for the *complete series of the Review*, in 12 volumes, now exhausted, and which it would require a very large outlay to reprint, the editor has been induced to make a selection of all the important and valuable papers contained in them from the beginning, condensing, re-arranging and completing to date, and throwing the subjects after the manner of the encyclopœdias, into alphabetical order. In this manner everything of interest and importance will be preserved in a *convenient form for reference;* and the volumes will constitute the only repository for the shelves of the library, of such information, which by means of the monthly numbers hereafter will always be brought down to date.

The Volumes will embrace the gist of everything that has appeared in the Review relating to the *Southern and Western States.* (An imperfect index of which will be found at the opening of the 10th volume.)

To wit: Their HISTORY, POPULATION, GEOGRAPHY, STATISTICS; AGRICULTURAL PRODUCTS, of COTTON, SUGAR, TOBACCO, HEMP, GRAINS, NAVAL STORES, etc. etc.—MANUFACTURES; detailed accounts, statistics and history of all branches,—INTERNAL IMPROVEMENTS; complete statistics of RAIL ROADS, results profits, expenses, costs, advantages, miles in projection, construction, completed, etc.; Plank Roads, Canals, Navigation, etc.—*Statistics of Health and Diseases, wealth and progress; relative condition, whites and blacks*; SLAVE LAWS and STATISTICS, *management and amelioration of slavery,—origin, history and defences of slavery and slave institutions;* the valuable treatises of HARPER, HAMMOND, DEW, on slavery, etc.; COMMERCE OF THE SOUTH AND WEST in all of its minute particulars, etc. together with an historical and statistical sketch of *each of the states and cities,*—the *domestic and foreign trade, resources, manufactures, etc. of the United States;* the CENSUS RETURNS from 1790, with the COMPLETE STATISTICS OF THE CENSUS OF 1850.

The volumes will be issued in September, October and November, 1852, and orders are solicited in advance, payable on delivery to Merchants, or to the parties themselves.

DEBOW'S REVIEW, of which this is a condensation, is published monthly in New Orleans, and other southern and western cities, 112 to 140 pages, small print, fine paper and engravings, and treats of all the great industrial matters relating to the Southern and Western States, and incidentally of the North and the Union. Terms $5 per annum.

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☞Orders on Commission Merchants in cities or towns, payable on sale of crops, received as cash.

J. D. B. DEBOW,
Ed. DeBow's Review, Merchant's Exchange.
New Orleans, July, 1852—6t

PIEDMONT FEMALE ACADEMY.

THE Second Term of the First Session of this Institution will commence on the 20th of July. The subscriber is making an improvement by which he will be enabled to take five or six more young ladies after the 20th of next month. Terms $60 for five months for board and tuition in all the English branches and also in the French language. An additional fee of $15 will be charged those who take lessons in music. Address the subscriber at Gordonsville, Orange County, Virginia.

july—2t J. W. GOSS.

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THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va.

DAILY AND WEEKLY DISPATCH.

THE Daily and Weekly Dispatch, published at the office on Governor street, near Main, Richmond, Virginia—commenced in October, 1850—have reached a very astonishing popularity. The DAILY DISPATCH is a penny paper and has an immense circulation in Richmond and contiguous towns. It affords the best medium for advertising. Subscribers in the country furnished with the paper at the low price of Four Dollars per annum.

The WEEKLY DISPATCH is published at ONE DOLLAR PER ANNUM, and is therefore one of the cheapest Newspapers ever published. It is a handsome sheet and contains the News of the Day, together with Literary Selections from the very best sources. The list is already very large and constantly increasing. No paper will be sent until paid for in advance. HUGH R. PLEASANTS is the chief contributor to the editorial columns of the Daily and Weekly Dispatch. Address the Proprietor, Richmond, Virginia.

AUSTRALIAN WHEAT.—VERY SUPERIOR.

THE berry of this grain is extra large, and makes the best of flour. It produces a greater average crop than any other variety now grown in New York. Several years' experience in its cultivation, proves that it is less liable to rust or mildew than other kinds; and as the stalk is large and strong, it is also less liable to blow down or lodge. Price, $4 per bushel. Other varieties of wheat, such as the White Flint, Mediterranean, Black Sea, &c.

Also Agricultural Implements of all kinds, and Field and Garden Seeds.

A. B. ALLEN & CO.
189 and 191 Water street, New York.
june—3t

EAGLE FOUNDRY.

THE subscriber having removed to the large Foundry, just erected by him and fitted out with machinery of the latest and most approved style, is, in addition to the manufacture of Tobacco Flattening Mills, prepared to receive orders for Stationary Steam Engines, Saw and Grist Mills, Agricultural Machines, Tobacco Presses of every description, and all kinds of Iron and Brass Castings. He pledges himself to execute faithfully, and with dispatch, all work entrusted to him, and respectfully solicits a call from his friends and the public generally.

The highest cash prices paid for old cast iron, brass and copper.

PHILIP RAHM,
je—1y Cary, between Pearl and 15th sts.

COCHIN CHINA AND SHANGHAE FOWLS.

THE subscriber has for sale a few pairs of PURE BLOODED Fowls, from the above stock, originally imported by himself, warranted true to their name, and not surpassed by any other stock, for good qualities, in the country. Reference given in regard to them if desired.

Orders addressed to the subscriber for the same will receive attention.

CHARLES SAMPSON.
West Roxbury, Mass. June, 1852.—2t

2 SOUTHDOWN BUCKS FOR SALE.

THE subscriber has for sale Two Bucks of the Southdown Blood. These Sheep are descended from the best Southdown stock in England. They are grandsired by the buck imported by Bishop Meade from the flock of Mr. Webb, and they are sired by an equally good and well bred sheep, obtained of the late Dr. M'Caulay, near Baltimore. This sheep has a long pedigree of illustrious ancestors. My bucks are seven-eighths Southdown and the remainder Cotswold and Bakewell blood, and are now one year old, and ready for service in October next.

RALEIGH COLSTON,
Near Woodville Depot P. O. Albemarle.

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Chemistry Made Easy for Farmers, paper—25 cents.

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Miner's American Bee Keeper's Manual—$1. Mail edition—75 cents.

Brown's American Bird Fancier—50 cents. Mail edition—25 cents.

Canfield on the Breeds, Management, Structure and Diseases of Sheep—$1.

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Gunn's Domestic Medicine; or, Poor Man's Friend in Affliction, Pain and Sickness—$3.
mar—1y

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Elements of Scientific Agriculture, or the connexion between Science and the Art of Practical Farming. This was the prize essay of the New York State Agricultural Society; by J. P. Norton, M. A.

Elements of Agricultural Chemistry and Geology; by Jas. F. W. Johnston.

American Agriculturist, for the Farmer, Planter, Stock Breeder, and Horticulturist; by A. B. Allen; numerous plates. The 8th and 9th volumes of this most valuable work are received, also complete sets. Every farmer should have this work.

American Farm Book, on Soils, Manures, Drainings, Irrigation, Grasses, Grain, Roots, Fruit, Cotton, Tobacco, Sugarcane, Rice, and every staple product of the United States.—This is a perfect farmer's library, with upwards of 100 engravings; by R. L. Allen.

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Johnson's Dictionary of Gardening; by David Landreth.

London's Gardening, for Ladies; by A. J. Downing.

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In addition to which, Morris & Brother have all of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—1v

PLANTATION BOOK.

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CONTENTS.—Actual number of pounds to a Bushel of Wheat, Articles received for use of Plantation, Brick-Kiln, Births of Negroes, Balance Sheet, Cows, Cultivation, Contents of a Corn Crib, Clothing to Negroes, Diameter of a Horse Mill, Deaths of Negroes, Directions how to use this Book, Expenses and Sales for the Year, Form of a Contract with Manager, Force of a Draught Horse, Horses, Hogs, Instructions to Managers, Implements, Journal or Daily Record, Medicines, Manure Tables, Mechanical Power, Effect of the Labor of an Active Man, Inventory of Negroes, Oxen, Washington's Letters to his Steward, Plantation Management, Police, Ploughing Rules, Planting Distances, Physicians' Visits, Quantity and Value of Produce Made, Quantity of Work of a Man and Two Horses, Rules for the Government and Discipline of the Negroes, Rotation Tables for Cultivation of Crops, Rural Economy, Sheep, Steam Engines, Stock and Implements, Tools, &c. used by the Negroes, Weight of Materials, Weights and Measures, Wind Mills, Water Wheels, When a Horse Draws to Advantage, &c. &c.

There are extra sheets for monthly and yearly reports, for the use of those who do not live on their farms. The Book will be sent by mail free of postage to any one who will remit the price in money or postage stamps.

This Book is by one of the best and most systematic farmers in Virginia; and experienced farmers have expressed the opinion, that those who use it, will save hundreds of dollars.

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AUSTRALIAN WHEAT.—VERY SUPERIOR.

THE berry of this grain is extra large, and makes the best of flour. It produces a greater average crop than any other variety now grown in New York. Several years' experience in its cultivation, proves that it is less liable to rust or mildew than other kinds; and as the stalk is large and strong, it is also less liable to blow down or lodge. Price, $4 per bushel. Other varieties of wheat, such as the White Flint, Mediterranean, Black Sea, &c.

Also Agricultural Implements of all kinds, and Field and Garden Seeds.

A. B. ALLEN & CO.
189 and 191 Water street, New York.
june—3t

EAGLE FOUNDRY.

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CHARLES SAMPSON.
West Roxbury, Mass. June, 1852.—2t

2 SOUTHDOWN BUCKS FOR SALE.

THE subscriber has for sale Two Bucks of the Southdown Blood. These Sheep are descended from the best Southdown stock in England. They are grandsired by the buck imported by Bishop Meade from the flock of Mr. Webb, and they are sired by an equally good and well bred sheep, obtained of the late Dr. M'Caulay, near Baltimore. This sheep has a long pedigree of illustrious ancestors. My bucks are seven-eighths Southdown and the remainder Cotswold and Bakewell blood, and are now one year old, and ready for service in October next.

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mar—1y

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Elements of Agricultural Chemistry and Geology; by Jas. F. W. Johnston.

American Agriculturist, for the Farmer, Planter, Stock Breeder, and Horticulturist; by A. B. Allen; numerous plates. The 8th and 9th volumes of this most valuable work are received, also complete sets. Every farmer should have this work.

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American Husbandry.—Series of Essays on Agriculture, with additions; by Gaylord and Tucker.

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Downing on Fruit Trees.

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In addition to which, Morris & Brother have all of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—1v

PLANTATION BOOK.

J. W. RANDOLPH, Richmond, Virginia, has just published the Plantation and Farm Instruction, Regulation, Record, Inventory and Account Book, for the use of managers of estates, and for the better ordering and management of plantation and farm business, in every particular, by a Southern Planter. Order is Heaven's first law—*Pope.* Price $2, or six for $10; a larger edition for the use of cotton plantations, price $2 50.

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There are extra sheets for monthly and yearly reports, for the use of those who do not live on their farms. The Book will be sent by mail free of postage to any one who will remit the price in money or postage stamps.

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"It is full of useful information and is well calculated to induce a methodical system, industry and energy especially vital to a successful and profitable cultivation of mother earth."—*Richmond Enquirer.* june—tf

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oct—tf

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THE cheapest place in the city of Richmond to buy Hats and Boots is at the above store, where every article sold may be relied on as represented. By this means he has gained a good run of custom, and his customers feel satisfied. Below is a list of his prices, which will be strictly adhered to:

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THE RICHMOND AND PETERSBURG RAIL ROAD COMPANY respectfully inform farmers living on the Roanoke River and on the line of the Raleigh and Gaston Rail Road, that they are transporting tobacco and other produce between Richmond and Petersburg with promptness and despatch, running daily trains of eight wheel covered cars, securing tobacco and goods from damage. Tobacco consigned to the care of J. Lynch, Rail Road Agent, Petersburg, will be forwarded, free of commissions, to Richmond. Goods purchased in Richmond and consigned to the Rail Road Agent at Gaston will be forwarded up the river without charge for forwarding.

THOS. DODAMEAD,
Sup't R. & P. R. R.

June 24, 1851—tf

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THE undersigned, in connexion with their Rolling Mill, have erected an extensive Manufactory of Axes, Hatchets, and Tools generally, which they warrant equal to any manufactured, and offer at Northern prices. They solicit the patronage of the agricultural community.

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oct—1y

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Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, Editor. P. D. BERNARD, Proprietor.

Vol. XII. RICHMOND, SEPTEMBER, 1852. No. 9.

From the Soil of the South.

STRAWBERRY CULTURE.

We have learned our strawberry culture from long experience, and to our experiments we considered the climate and the nature of the plant. We found a mammoth fruit, and our object was to dwarf the vine without affecting the size or quality of fruit, for we had learned that all plants require different kinds of food in perfecting their stems, stalks and fruit.—We give the strawberry all it wants to perfect its fruit, and retain the luxuriant habit of the vine, by a cold and simple diet, thus enabling it to brave the heat of our summer suns, and to help the fruit stalks, instead of putting all its capital on its back in the way of clothing. We will not pretend to say that all strawberry plants can be cultivated in this way; we believe they must go through a thorough acclimation, and be gradually disciplined to their humble fare. All fruit cultivators are aware that an over luxuriant tree seldom produces much fruit; hence root pruning has been resorted to, to check the too rapid growth of wood, and it invariably forms fruit where none or little grew before. It is upon this principle that we cultivate the strawberry.

The soil that seems best suited to the growth of the fruit is a sandy loam. The natural location of the bed has much to do with its productiveness; as moisture is one of the greatest elements in perfecting the fruit, the bed should be as near a stream of water as possible. New land is preferable to old—we care not how rich the old may be, or how poor the new may be. Before planting it should be mellowed deeply. The vines may be planted any time from September to April, (we have moved them in full fruit.) We plant six or eight rows of Hovey's Seedling, which is a pistillate to one of the Large Early Scarlet, which is a staminate or hermaphrodite, both bloom and fruit together; the rows two feet apart and the vines some eighteen inches apart in the rows.

Strawberry vines will live planted almost any way, but if fruit be an object the first season, the roots should be put in the ground just as they were taken from it. The vines will make from runners the first season, enough to stock the ground. In the fall, go over the ground with the hoe, and thin out to some ten or or twelve inches, leaving the vines to decay where cut up; after this is done, cover the whole ground with decomposing leaves, scrapings of forest earth, fine mud from ditches, and any vegetable matter that will compose soon. Before the plants bloom, top-dress them with ashes, leached or unleached. Keep the whole surface of the ground covered with leaves, which shades and cools the ground, and keeps the fruit clean. As the fruit stalks appear, should the weather prove dry, give them water; as soon as the fruit sets, should the weather prove dry, give them water; as the fruit ripens, should the weather prove dry, give them water. By this treatment, another fruit stalk will have started, before the first is done, and so on through the season. The vines will make few or no runners during the fruiting season. Keep down the grass and weeds with a hoe. We have tried the plough, but it let in too much sunlight. Better keep the grass smothered with leaves. Let those who wish strawberries *five weeks* in the year, trench in two feet of stable manure; but those who like them six or eight months, exclude all manures but Nature, and turn green leaves into nice and luscious fruit.

This can be done. This we do, and our readers that choose can do the same. We doubt not there is plenty of land through the country as poor as ours. When our old friend of the New York *Plough* walked through our beds last March, he exclaimed, "well, well, this is the first strawberry fruit I ever saw without vines!" And it was literally true; the ground was covered with fruit with scarcely yet an appearance of leaf.

For the Southern Planter.

COMMUNICATION TO THE VIRGINIA STATE AGRICULTURAL SOCIETY.

BY EDMUND RUFFIN.

Some of the Results of the Improvements of Land by Calcareous Manures on Public Interests in Virginia, in the Increase of Production, Population, General Wealth, and Revenue to the Treasury.

The statistics of a country, especially in regard to its production, population and wealth, and the comparison of these values at different intervals of time, and under different influences, constitute the most important materials to aid the investigations of the political economist, and the action of the statesman in directing the public policy. Without these aids, no deductions, as to the economy, the profit, or the loss, of the most trivial as well as the most important measures of state, can be known with certainty in advance; and nothing, but the lapse of long time, and consequences so ruinous that their sources cannot be mistaken, will serve to show clearly the errors of action or omission, in the policy of government.

The Legislature of Virginia has done nothing for the direct object of aiding the knowledge of statistics, and thereby giving general light and aid to legislation. But without such intention, there has been prepared, and is scattered through the legislative journals and documents, a great mass of valuable statistics, or materials for statistics, which might be made very far more accessible and useful, if properly digested and published in a concise and clear form. From this mass of materials were principally prepared the various tables furnished from the Auditor's Office to the late State Convention, upon special calls and resolutions of that body. These tables are far from being well digested, or even in good shape for examination. Yet they furnish almost the only accessible information on the general statistics of Virginia. Though not touching agriculture directly, nor designed to touch it at all, still these reports of population, assessments of lands, and taxation, will serve indirectly yet conclusively to prove most important results, and to indicate, to those inquirers who may labor through the examination, the causes of agricultural decline and resuscitation.—Surely the more full investigation and clear proof of these important results, thus commenced without design, would be well worth the attention and furtherance of the legislature of this almost exclusively agricultural country!

The Governor of the Commonwealth, in in his message of January, 1852 to the legislature now in session, adverted to some of these statistical facts in the following words:

"The increased value of the lands lying in the tide-water district, as exhibited by the returns of the recent assessment, vindicates the science [of agriculture] and appeals strongly to you for aid and encouragement in its behalf. In 1819 the lands in this district were valued in the aggregate at the sum of $71,496,997, and in 1838 at $60,704,053 20½, exhibiting a *decrease* in value, during the nineteen years that intervened, to the enormous amount of $10,792,943 79½. And yet those same lands were recently assessed at the sum of $77,964,574 52, showing an *increase* in their value during the last twelve years of $17,260,521 31½.

"This remarkable and gratifying change in the value of these lands cannot be attributed, to any great extent, to benefits resulting from works of internal improvement; for thus far these improvements have been chiefly confined to other sections of the State. And in vain will we look for a solution of this problem, unless we remember that for several years past, the enterprising citizens of this section of the State have been devoting themselves with a commendable zeal to the subject of agricultural improvement; and by a proper application of compost, marl and other manures, and the use of other means which a knowledge of this branch of education has placed at their command, they have redeemed and made productive and valuable, lands heretofore worn out by an improper mode of cultivation, and consequently abandoned by the farmer as worthless and unfit for agricultural purposes."

Then, according to the government assessments, the lands of the whole tide-water district of Virginia, in nineteen years, (from 1819 to 1838,) decreased in general value nearly eleven millions of dollars. In the next twelve years, (from 1838 to 1850,) the lands of the same district were increased in value more than seventeen and a quarter millions of dollars, as shown in the last assessment.

But great as is this late increase, and the more remarkable because taking the place of previous continued and great decline of values of lands—and on every ground deserving legislative inquiry and thorough investigation—these stated amounts of former decline and recent increase of values, are both much short of the true amounts. This position I will endeavor to establish; and further, that all the true clear increase of value, founded, as it justly is, on increased production and fertility, and much more than any apparent amount, is the result of one particular agricultural improvemnet only, viz: the use of calcareous manures. For great as have been the values of many other improved agricultural processes or applications—and great as have certainly been their benefits, all such improvements, if without the addition of marling or liming, have not been sufficient to arrest the before downward progress of agricultural production, much less to recover the lost elevation. The other many and great improvements have been introduced generally, and have been increasing in use for forty years—and more extensively

and beneficially in the middle than in the lower country. Yet the before declining counties have continued to decline, unless they used calcareous earth as manure, or otherwise possessed a soil or sub-soil which, however exhausted by abuse, contained, naturally, lime in some one or other form of combination, and in quantity sufficient to reinstate the wasted fertility. Even in the counties the most improved as yet by marl or lime, there are still very large spaces which have continued to decline in production; and adjacent counties, which have not used marl or lime, are still wholly in the former general state of decline. Therefore, the actual agricultural improvements, of all kinds, have not only produced the increased value of seventeen and a quarter millions, but they have first paid for the heavy losses caused by more general and continued exhaustion of lands, before exhibiting this or any net gain of fertility. And, inasmuch as, where calcareous manures have not been used, either in the tidewater district, or the first and second ranges of counties next above, all other improvements have not served to maintain the former production, surely, where production has been increased, by aid of marl and lime, to these causes alone ought all the actual net increase to be ascribed. This inference and conclusion would now be sustained by the concurrent opinions of all experienced improvers of land in lower Virginia, and, upon the ground of common report, by most other well informed persons. It is further sustained by the statistics of production, assessments, population, and revenue. If, in addition, we had the agricultural statistics of the amount and localities of marling and liming done, and of the usual rates of production before and since, the proofs would be as clear, and the accordance of cause and effect as manifest, as the instruction thereby to be afforded would be important to stimulate further efforts elsewhere for as gainful improvements. These agricultural statistics could be very easily obtained, and without cost to the treasury. The Legislature has been repeatedly urged to render this service to agricultural knowledge—and has either contemptuously disregarded or rejected all these applications for this small and costless boon to agricultural instruction. Without this aid, by far the most important of all, and using only other existing public statistics, and known and unquestionable general facts, I will endeavor to prove that at least as much as all the actual increase of value of lands in the tidewater region, whatever may be the true amount, has been produced by marling and liming—and all the other accompanying benefits, to private and public interests, of course must rest on the same foundation; and further, that the actual improvements so made, are much more considerable and valuable than as estimated in the Governor's message to the Legislature.

In one of the reports to the former Board of Agriculture, communicated to the General Assembly, and published in the documents of 1841–2, the following passage appeared:

"It would be a most important statistical fact if it could be ascertained how much land in Virginia has already been marled. The quantity, however, is very great; and all the land marled has been thereby increased in *net* product, [*i. e.* after paying all expenses of cultivation, &c.] on a general average, fully eight bushels of corn, or oats, or four of wheat, [following corn,]—and *the land increased in intrinsic value fully two hundred per cent.* on its previous value or market price. Where the marling has been judiciously conducted, these rates of increase have been more than doubled. From these data might be calculated something like the already prodigiously increased values and products due solely to marling [and liming], and which will still be increasing from year to year. If not already reached, the result *will* soon be reached, *of new value to the amount of millions of dollars having been thus created.*"

If the suggestion above stated, and which was more formally afterwards recommended by the Board of Agriculture, to collect "the statistics of marling and liming," had been then acted upon by the Legislature, there would have been added (by the force of the information thereby diffused and instruction so aided) a three or four-fold amount to the $17,260 latterly annually paid into the treasury from the increased assessed value of the lands so improved. And if thus enabled to know the actual extent and effect of these still recent and slightly known improvements in each county, there is little doubt that it would be found that the change from a decreasing to an increasing population, of declining to rising values of lands, and of declining to increasing receipts of revenue, as well as the increased products and profits of land, would be all found as necessary consequences of, and strictly in proportion to, the extent of the judicious use of calcareous manures.

If the above quoted assumption, or prediction, which was uttered in 1842, had then attracted any remark or notice, (which it did not,) it would have been deemed by most persons as the mere illusion of a visionary enthusiast. But the utmost extent of the claim and prediction, then made, did not equal the then actual results—and which, a few years later, were sustained, though indirectly, by the official documents of the governments of Virginia and of the United States. Upon these and other facts presented by these documents, I will now proceed to remark—to enforce what they exhibit, incidentally and accidentally, of agricultural progress—and to expose some palpable short-comings of parts of these reports, and the deductions thence made.

The assessment of lands next preceding that of 1819, was in 1781. Vacant or uncleared land was then so plenty, and the supply so far exceeding the demand, that prices were necessarily low in proportion. Therefore, a comparison of the values of lands as assessed un-

der authority of the act of 1781 with those of any later assessment, would afford no true indication of the changes of productive value, or of the measure of exhaustion or improvement, in the interval of time. But the earliest stated assessed values, of 1781, will serve for fair comparison with each other for the time when they were affixed.

It is also a truth, which I readily admit in advance of any claim, that the assessments of lands in 1819 were put too high generally—the prices of lands being then nominally and apparently enhanced by what was truly but the depreciation of the then redundant and irredeemable paper currency. But it is not less true, that at the next assessment, in 1838, both the money and productive values of all marled lands had then risen much higher than they had been ten years before—which earlier time (about 1828) was the true zero of the general decline of fertility and production, and also of market prices of all lands since improved in the tide-water district. Whoever remembers the general impoverished condition of lands, and their low prices, about 1828, and the anxiety of the numerous desponding or desperate proprietors to sell out and to emigrate to the west, will sustain my position that values were then lower by more than one-fifth part, at least, than in 1838; and would have been put so much lower, if a state assessment had been made in 1828. If I were to claim the extent of reduced value shown in all actual sales made about that time, two-fifths less than the later prices of 1838 would not be too much abatement. But even at one-fifth less than the actual later assessment, which certainly would have been the least estimate, the true lowest value would have been (61—12=) 49 millions of dollars only in 1828; which lowest value was increased to the actually assessed 61 millions by 1838, and to 78 millions by 1850. Therefore, instead of the increase of value being 17¼ millions, in twelve years, it began to increase ten years earlier from a much lower mark, and amounted to (12+17¼=) 29¼ millions in twenty-two years—making a much greater aggregate increase, but at a somewhat smaller rate of average annual increase.

A small part of this growing value had been created by the earlier marlings, from 1816 to 1828. But however important was the benefits on the few farms, the whole amount was too small to equal the continued depreciation on the great majority of lands in the same counties—and of course no evidence of such increased value appeared in the general aggregate returns for each county. Thus it was, that Prince George county, taken together, continued to exhibit a general progressive depreciation, after some dozen farms had been marled, and these doubled in product.

But neither the official statement of increased value of lands, amounting to seventeen and a quarter millions of dollars, beginning from 1838, nor my estimate of twenty-nine and a quarter millions increase, from 1828, will present any approach to the true value derived from marling and liming even then effected. This opinion rests on grounds which will now be stated:

1st. With the actual increased productiveness and higher assessment of lands, on a general average of the tide-water district, there has also been either produced, or retained, an increase of population, (which had been generally decreasing before, and for a long time—) and also gained, or invested, a proportional increase of moveable farming capital, and much greater accumulations of wealth, the fruits of the increased production of the land. Besides all these gains, both to individuals and to the State, there is to the treasury the increase of revenue on not only the actual increase of assessed value of lands, but of all the other subjects of taxation, above referred to, increased in proportion to and because of the improved production of land.

2d. The true and full increased value of lands, then existing, did not appear from the assessment of 1850. It is a truth known to all who have observed, that all state and other assessments or valuations of lands, by official assessors or appraisers, are made with much regard to the last preceding assessment of like kind, and to the general average rates of market prices in the particular locality, for some length of time preceding the then valuation. Therefore, when either intrinsic values, (founded on the rate of production,) or selling prices of lands, or both, are declining, and have recently declined greatly or rapidly, the state assessor, (like each individual proprietor,) will not rate any farm as low as an actual sale of it would show to be the then true market value. And on the other hand, when true intrinsic values are rising, market prices, indicated by actual sales, never keep pace with the advance of true value; and a state assessment then made would be still (more than in general) below market prices, and much more below the true values. Such were the circumstances existing as to the improved lands in 1850; and though their assessments were raised greatly above those of 1838, (making more than seventeen millions increase of valuation,) still it is notoriously true, that the new and advanced valuations of these improved lands are much too low. For the reasons here given, these lands are valued lower, in proportion to true value, than other neighboring and unimproved lands, of which the assessments have remained at the previous rate, or have been put lower. As examples of these different results, I will state the preceding and latest assessments of two contiguous tracts of land, belonging to the same proprietor. One, before being at all improved, and in a then course of long continued exhaustion, was assessed in 1838 at seventeen dollars the acre. This rate was fixed upon because of the former higher value of the tract, and was certainly higher than the land would then have brought at fair sale and price.

Before 1850 this land had been mostly marled, and more than doubled in production. The new assessment of that year was twenty-five dollars—full high compared to other lands in general under like circumstances, but in fact as much too low compared to a fair selling price, as the previous lower assessment had been too high. The other adjacent tract of poor and much exhausted land, had been assessed at ten dollars in 1819, at five dollars in 1838, and was continued at the same rate in 1850. Yet about the same recent time it was bought, at private sale, for a little less than five dollars the acre—which proves that the assessment was something above the then highest market price, and greatly above the ordinary assessed rates, which are generally much below market prices. These are fair examples of the general facts, and of my position that lands recently increased in true value are always assessed too low, and those decreased in true value, too high, compared to each other, and also to the general rates of the same assessment.

3d. In addition to all these new and great increased values, the results of improvement of lands, (which though certainly existing, do not appear in the public documents as effects of such causes, if appearing at all, and which new benefits, therefore, cannot be clearly and fully traced, as they should be, to marling or liming,) there is the general omission of all the first ten or more years of these first beginning and growing values, previous to the assessment of 1838. I have before shown, as to lands, that the true beginning of increased production and value, of enough amount to be felt in the wealth and finances of the State, was from about 1828, and from a much greater depression of values than existed in 1838, the lowest point shown by any public assessment of lands. But all the other moveable agricultural capital and general wealth, and subjects of taxation, which were the necessary results of increased production of lands, had also been increasing with, and in proportion to, the growing improvement and value of lands. All this newly created value, in personal or moveable property, which had been commenced still earlier than 1828, and had been growing fast after that time to 1838, was unknown as the result of the true cause; and even now, the amount is not indicated by any thing precise in the public documents.

Upon all these grounds, I maintain that the true amount of new values which had already accrued to the Commonwealth in consequence of the agricultural improvement of the tide-water district—and which was all due to marling and liming—would exceed by a very large amount the highest estimate of values before made, and founded on the increased rate of assessment of lands in 1850.

Further. Not one-twentieth part of all the lands below the falls of the rivers has yet been marled or limed. Therefore, the improvement of this very small proportion (say one-twentieth) has produced all the great increase of values, ascertained and unascertained, and of which the ascertained part, in the general summing up of the last assessed values of lands, is spread over and allowed for the whole tide-water district. It is true that the improvement of some farms by these means, say to double value, operates to increase the appreciation (and perhaps the assessment) of neighboring lands possessing like facilities for being so improved. But such is not usually the case, as to the state assessments. Moreover, there are large spaces near to, or intermingled with, the most extensive marlings, and also entire counties more remote, which either have no such facilities, or have totally neglected their use. In these cases, the assessed or otherwise estimated values have either not increased at all, or have continued to decrease. All these cases, by far the more numerous, serve to keep down the general average assessment, and to detract, in the aggregate amount, from the apparent measure of increased value and actual assessment of the smaller space of improved land.

All these claims for the improved value of the tidewater district may, perhaps, be admitted, and yet it may be denied that the use of calcareous manures was either the only (sufficient) or even the main cause. To meet such objections, I will add to the foregoing general reasons, other reasons and facts more in detail. Even without the deficient and needed statistics of marling and liming, and their particular effects on production, the existing evidence is ample. But it is mostly indirect, and the entirely satisfactory proof of the proposition will be reached by a course of circuitous reasoning which may be tedious.

The older settled counties, including all those which have been most resuscitated in latter times, had all been long declining in production and population. Some of the oldest counties had declined in population from the time of the earliest census, (in 1790,) and perhaps still earlier, when there was no such evidence of the fact as the census reports have since exhibited. From these unquestionable facts of long declining population, continued impoverishment of lands, and general average decline of production, might be safely inferred. But there is abundant and direct evidence of this, though not such as can be conveniently cited and quoted.

All recollection of men now past middle age will go to affirm the former general course of impoverishing culture, and general average decline of production. Every one of the few who wrote in these early times on agriculture spoke of the general impoverishment of lower Virginia, and its then continuing progress, as notorious and unquestionable facts.

To come to more particular authorities—Strickland, an English farmer and a writer of judgment and character, personally examined the agricultural condition and prospects t

this country, and published his opinions in 1801. Probably his unfavorable views were heightened by the strong contrast of our poor lands and their then exhausting and ruinous cultivation, with the good farming and rich lands of England. But, making this allowance, his remarks seemed to be honest and truthful. Among his scattered remarks are these (quoted in "Arator"):

"Land in America affords little pleasure or profit, and appears in a progress of continually affording less."—"Virginia is in a rapid decline."—"Little profit can be found in the present mode of agriculture of this country, and I apprehend it to be a fact that it affords a bare subsistence."—"Virginia is the southern limit of my inquiries, because agriculture had there already arrived to its lowest state of degradation."—"The land-owners in this State are, with a few exceptions, in low circumstances; the inferior rank of them wretched in the extreme."—"Decline has pervaded all the States."*

The first effectual exposer of the exhausted lands and exhausting culture of Virginia, was our great countryman and first agricultural teacher, John Taylor of Caroline. His "Arator," the earliest notable agricultural work produced in Virginia, throughout offers the fullest testimony of that general impoverishment and ruinous progress which I have asserted. It may be said to be throughout one trumpet-tongued exposure of the existence and evils of this general condition; and it was the first warning heeded by our people. But though this work awakened general and proper alarm, and stimulated to great efforts for remedy and relief, these efforts served barely to stay something of the progress of general impoverishment, but could not change it to even the beginning of general resuscitation.

Enough has been said, I presume, to establish the general facts of great and progressive exhaustion of lands, and the failure of any measures used for remedy, sufficient to affect general interests, before the commencement of marling, about 1818, or even its considerable extension, about 1828.

To those not acquainted with the details of our exhausting system it may not be superfluous to explain why the worst effects should have been produced so slowly—and indeed were not so desperate even when Taylor uttered his solemn warnings, as at a later time. The universal former practice was to cut down the forest growth and bring new land under culture every year, to supply the place of the oldest and most exhausted land, then or later turned out of cultivation. So long as good land remained to be cleared, there might be little or no diminution of the annual crops of a farm, or perhaps there might be even an increase of the agricultural products of the State in general, no matter what destruction was made of the land before cultivated. Such was the case for a century or more in the oldest settled counties—and such is still the case in the latest settled counties of lower and middle Virginia. But, in the older counties, when all the good land had been cleared and worn out, and the still remaining wide extent of forest land would not pay for the clearing and exhausting, then the full fruition of the previous system was realized. Then the production of each entire farm (as it reached this position) began to decrease, and the many such particular results to become apparent even in the government statistics, and in the diminished receipts of taxation. The subsequent continued decline of population, and more latterly that also of agricultural productions, are shown in the returns of the census; and the decline of value of lands by the state assessments, whether the correctness of my comments thereupon be admitted or denied.

After beginning to use marl or lime extensively, some of the oldest settled and most exhausted counties, as James City, Prince George and Charles City, began to recover, and have continued to increase in production, in assessed value of lands, in productive population, and in revenue to the treasury. Other neighboring counties, not using these manures, or to but small extent, as Sussex, Southampton and Greensville, in the tide-water region, and Dinwiddie, Amelia and Nottoway, next adjacent, and above the falls, have all continued to decline, in the general, in all these respects. These facts will appear fully and clearly in the statistical tables which will follow, and of which the materials are furnished in different public documents, in the Auditor's Office, and the census reports of population and agricultural production. Nothing can be more striking than the present contrast thus exhibited, between the three counties formerly so exhausted and recently so improved, and the other six. If there exists any sufficient cause for the marked difference of results, except the use of calcareous manures by the now thriving counties, and the omission by the declining, it is unknown and unsuspected.

It is true that sundry other counties, which have marled to considerable extent, do not show near such good results as the three selected for comparison. I am not well or personally acquainted with these cases. Such exceptions, real or apparent, probably could be explained, if all the circumstances were known. In some counties, the census was taken so imperfectly, that a truly growing population is made to appear as decreasing. In other counties, the last assessment of lands was much lower than even the too low general standard. In other counties, moral causes, and habits of society, have served to render of but little benefit their facilities for marling. In other counties, gross ignorance of the action of marl, and of agriculture generally, and injudicious practice in marling, in great measure have counteracted the due effects of the

* Strickland's observations were republished in full in the Farmer's Register.

applications actually made. For these reasons, as well as to avoid all uncertain ground—also because of the great labor and difficulty of the investigation to a private individual, while the government statistics of agriculture are deficient in the most important particulars—it was necessary to limit my comparative view to the few counties which suited best for fair comparison, by their similarity in some points, and their difference in others.

The nine counties I have named were selected as all being together in a connected group—and as under circumstances as nearly alike as could be found with the differences of position, &c. required for comparison. No space so large, and also embracing these required differences, can be found more alike in all other respects, and in general. It was necessary, for the very object sought, to take some counties abundantly supplied with marl and others without. Also it was necessary to select counties which had used marl or lime longest and the most extensively. Prince George, James City and Charles City are supposed to occupy this position. On parts of all, either marl or lime has been used longer and over more space, in proportion to their extent, than in any other counties. But even of these, not one-third of the arable, or one-eighth of the whole surface has been yet marled or limed, whether sufficiently or insufficiently, properly or injuriously.

These three counties, all lying along James River, have each a narrow river margin of originally fertile and very valuable land. As on these very strips of river margin were made the earliest settlements in Virginia, they were greatly exhausted long before the first census. Nearly all the very much larger interior portions of these river counties were poor naturally—and all that had been long cleared and cultivated were also made much poorer by exhausting tillage.

The other three counties of the tide-water region, (but neither touching any tide-water,) Sussex, Southampton and Greensville, were naturally as fertile as the preceding three had been, except as to the lands of the latter immediately on James River. The soils of Sussex and Southampton are generally more sandy, and, therefore, less fit for wheat, but better for corn and some other products than the James River counties. Sussex has used very little marl, and most of that but recently—Southampton much less, and Greensville almost none. From forty to thirty years ago, I knew Sussex well. The people of that county were then noted, and deservedly esteemed, as being very generally industrious, provident and frugal; and were as thrifty as the poverty of their land permitted. There were no very rich proprietors—and the poorest were independent upon the fruits of their labor. In regard to industry, good management, and thrift, the people of Sussex were admitted by all to stand much higher than the people of the adjoining county of Prince George. The remarkable change in their relative positions, as now existing, and which will be exhibited presently, can only have been caused by the extensive use of marl in the one county and the general neglect of it in the other. If any other causes of such effects exist, in this or in other cases, let those who know them state what they are.

Dinwiddie adjoins Sussex and Prince George on one side, and Amelia and Nottoway on the other. These are the nearest three counties above the falls. Marl or lime has been used on a few farms only of Dinwiddie; but not at all in either Amelia or Nottoway—or at least to any notable extent or effect. Dinwiddie was naturally of as good land, and Amelia and Nottoway much better, in the general, than the three marling counties—excepting perhaps the originally fertile strips of river margin of the latter. Probably, the low grounds, or alluvial flats bordering the streams in Amelia and Nottoway were equal in value and extent to the river margins of the lower counties. Moreover these rich alluvial flats were not brought under culture until after the river margins had been under exhaustion for a century or more; and the former even now retain much of their original fertility. Taking the counties throughout, the lands of Amelia and Nottoway were better than those of the three marling counties—and also the former were much less advanced in the general progress to impoverishment, than the latter, when the comparison of them will be begun, and for long after.

In selecting these counties for comparison and contrast, there were other conditions necessary to be observed besides those of contiguity and nearly similar natural circumstances. As was required for comparison, none of these counties have had their boundaries changed since the earliest time embraced. None contain towns, (included in the statements,) or growing villages, or have any other than an agricultural population, or agricultural interests. James City, only, is somewhat affected, and injuriously for my argument, by including part of the old and long stationary village of Williamsburg. Also, none of the marling counties have had any recent aid or new impulse to their prosperity from the existence of any railway or other facilities for transportation, whereas all of the other counties have had important aids of this kind afforded to agricultural interests, and which must have added much to their profits, or improved their condition as to income and wealth. The Petersburg and Roanoke railway, (now nearly twenty years in operation,) passes through parts of Dinwiddie, Sussex, and Greensville, and is of much benefit to the two latter counties especially. Another, the Greensville railway, a branch of the former, and nearly as long in operation, also passes through Greensville county, and still more to its advantage. The Southside railway passes through Dinwiddie and Nottoway. Amelia

has the benefit of the navigation of the upper Appomattox, created by art, and which came into use since the time when my comparative view of agricultural progress will begin.—The Richmond and Danville railway passes through the middle of Amelia, and offers another route to market for Nottoway also. Both the last named railways are new constructions. But they both were either authorized by law, or in rapid progress of construction, before the last assessment of lands. And their expected benefits must have advanced the estimated values of lands in anticipation of the use of the new facilities for transportation. The Seaboard railway passes through Southampton, giving easy access to Norfolk.

The City Point railway is indeed almost wholly in Prince George county. But it is used almost entirely for travel and commerce, and is of such little length, (nine miles only,) that scarcely any crops or agricultural products are conveyed to market on it. Neither does this road, nor the proximity of the town of Petersburg, afford any balance of advantage over the disadvantages caused by both to the agricultural interests of Prince George.

The report of the agricultural productions of any purely agricultural country, continued for many years, with the rates of increase or decrease, would offer a true measure of the prosperity or decline of the residents—unless they were tributary to some other community, or separate interest. The returns of agricultural productions, in the census, of 1840 and 1850, (for the preceding years 1839 and 1849,) are all that exist to be referred to for this important information. These returns were notoriously loose and imperfect. The numerous errors of individual reports, not being made by design, may perhaps serve in some degree to balance each other, and thus to show something like a fair general average of agricultural production for each county, but only for 1840 and 1850. If these reports had included 1830 also, in the ten years following there would have been seen a still earlier increasing production in the older marling counties, rising from a still lower state of impoverishment of the land. But even in the short and later time embraced in the returns, there will be seen, in the following table, very remarkable results, both in regard to the increase and decrease of production, and in full accordance with the alleged causes in the use or neglect of calcareous manures. Unfortunately, the general facts as to these alleged causes are all that I can adduce. If the Legislature had authorized the collection of these particular facts, (asked for formerly by the Board of Agriculture, and again denied very lately to a petitioner in a very far more humble position,) then all the conclusions would be known, and clear, on this subject, which now I can only reach through this long discussion.

The increase or decrease of population, for a particular or short interval of time, is not always a true exponent of either the agricultural, or the public and general prosperity of a country. An idle, improvident, drunken, thievish, or mendicant class, is an injury to any community; and the loss of such members, by emigration, banishment, or death, though so much diminution of general population, would be a positive benefit to the country, and to its industry and production. Thus, the number and increase of the class of free negroes, instead of aiding prosperity, are causes of weakness and loss to any community. Whites, who may be in their habits no better than free negroes, are generally as detrimental, for the time, to the industry and prosperity of the community. So are all surplus, and, therefore, unproductive slaves—while the increase of effective laboring slaves, if replacing lazy, drunken, or otherwise unproductive free men, make a far greater financial and public benefit, than merely maintaining the amount of population. But notwithstanding all exceptional cases, as a general rule, the population of a country being stationary or declining, for a long time, is sufficient evidence that neither production nor any other good thing is improving—or is likely to improve, without new causes of prosperity being introduced and put in operation. Hence, I infer of the counties in which population has long been generally declining, that the land also not only was, but still is in the course of being impoverished, and production being lessened. The numbers, increase and decrease of slaves above twelve years old, (collected from reports of the Auditor's Office,) which will be stated for each of the counties named, for 1830, '40 and '50, will furnish much better indications of the changes of productive labor, than either the total population, or any one separate and entire class thereof. The number of horses and mules, also, where, as with us, these make almost the entire force of teams for tillage-labor, perhaps offer still better indications of the amount and changes of agricultural labor. From the general improvements made in ploughing and harrowing, the increased hauling of manures, and of crops, more horses are required than formerly in proportion to the extent of land cultivated, and to the hands employed. If, then, the amount of team force remains stationary, or, still more, if decreasing, the condition of agriculture must be also declining. It is true that the horses kept merely for pleasure, or show, and still more racing horses, like the free negroes, and other human idlers, are so much detraction from the production and wealth of a country. But the numbers of useless horses probably do not vary greatly in proportion to all others, in these different counties, and so do not much affect the correctness of the indications furnished by the whole number.

All the counties named will now be presented in the following tables, for comparison and contrast in regard to extent of cultivation and amount of production—in values of lands—and in the amounts of revenue.

TABLE OF AGRICULTURAL PRODUCTIONS FOR 1840 AND 1850.

Description.	Counties.	Acres of "improved," or cleared land.	Years.	Grain of all kinds—in bushels.					Peas and beans.	Tobacco. pounds.	Cotton, (ginned) pounds.	Orchard products	Potatoes.	
				Wheat.	Corn.	Oats.	Rye, Buck-wheat, &c.	Total of grain.					Irish.	Sweet.
													Both Kinds.	
Above the falls of the rivers—not marled or limed.	Dinwiddie,		1840	36,083	270,550	133,563		440,196		2,197,109	72,610	$1,045	17,078	
	"	102,517	1850	60,275	304,556	97,373	493	462,701	4,223	1,782,521	1,600	77	12,664	25,248
	Amelia,		1840	50,637	244,785	106,466	92	461,970		1,871,134	6,015	4,848	7,699	
	"	109,109	1850	109,960	250,521	70,074	0	430,555	3,810	1,786,788	6,000	56	6,671	10,261
	Nottoway,		1840	42,145	248,863	70,130	0	361,138		2,212,950	20,682	2,493	8,367	
	"	93,401	1850	71,827	216,991	55,571	172	344,561	4,384	2,109,314	18,400	0	4,927	7,653
Below the falls—not marled or limed but to very small extent.	Sussex,		1840	18,777	404,793	103,916	269	527,755		175,642	477,043	37,520	34,815	
	"	91,408	1850	35,133	356,171	47,963	128	439,261	14,809	56,392	312,000	609	11,132	53,961
	Southampton		1840	9,730	553,895	71,312	3,047	637,984		25,346	851,315	40,345	88,036	
	"	159,668	1850	4,066	564,183	13,903	3,185	585,337	125,218	971	347,600	747	15,061	255,337
	Greensville,		1840	8,860	229,510	92,943	141	331,141		346,100	572,629	2,355	10,655	
	"	74,906	1850	17,619	211,537	16,540	66	245,762	8,837	138,000	286,000	0	3,123	21,796
Below the falls—most extensively marled or limed of all the tide-water counties.	Pr. George,		1840	31,439	176,640	35,221	563	243,863		115,000	23,340	535	6,483	
	"	57,603	1850	81,042	261,510	23,600	581	366,733	1,684	16,550	800	0	7,627	11,881
	Charles City,		1840	36,020	117,846	45,275	42	199,183		0	2,010	7,973	3,520	
	"	36,124	1850	81,229	178,940	26,026	20	286,225	1,164	0	800	16	2,461	3,061
	James City,		1840	17,241	86,500	34,765	0	138,506		8,000	6,307	210	2,904	
	"	21,251	1850	25,476	120,430	22,040	0	167,946	300	0	0	0	2,789	5,730

II.

TABLE OF POPULATION AND LABORING FORCE.

Counties above the falls of the rivers, not marled or limed.

	Classes of Population and Laboring Force.	Census of 1790.	1800.	1810.	1820.	1830.	1840.	1850.	Increase from 1840 to 1850.		Decrease from 1840 to 1850.	
									Aggregate increase.	Increase per cent.	Aggregate.	Per cent.
Dinwiddie.	Whites,	*	4,741	4,606	5,373	5,215	4,482	4,277	-	-	205	4½
	Free negroes,		246	476	668	885	630	680	50	7½		
	Slaves,		6,866	7,442	7,751	7,506	6,310	6,149	-	-	161	2½
	Total population,		11,853	12,524	13,792	13,579	11,422	11,106	-	-	316	2¾
	Slaves over 12 years of age,		-	-	-	5,557	5,703	3,485	-	-	2,218	38 5-6
	Horses and mules,		-	-	-	2,554	2,593	1,949	-	-	544	21
	* The town of Petersburg was included with Dinwiddie for 1790 only.											
Amelia.	Whites,	†	2,789	3,253	3,407	3,293	3,074	2,790	-		284	9
	Free negroes,		58	155	187	220	223	161	-	-	62	27½
	Slaves,		6,585	7,116	7,400	7,523	7,023	6,804	-	-	219	3
	Total population,		9,432	10,594	11,104	11,036	10,320	9,755	-	-	565	5½
	Slaves over 12 years,		-	-	-	3,848	3,893	3,720	-	-	173	4½
	Horses and mules,		-	-	-	1,823	1,953	1,829	-	-	124	6½
Nottoway.	Whites,	†	3,311	2,730	2,805	2,965	2,490	2,217	-	-	273	10½
	Free negroes,		107	180	177	223	158	151	-	-	7	4½
	Slaves,		5,983	6,368	6,676	6,942	7,071	6,047	-	-	1,024	14½
	Total population,		9,401	9,278	9,658	10,130	9,719	8,415	-	-	1,304	13½
	Slaves over 12 years,		-	-	-	3,565	3,334	3,432	98	2 9-10		
	Horses and mules,		-	-	-	1,637	1,500	1,456	-	-	44	
	† Nottoway and Amelia made one county in 1790, of which the total population amounted to 18,097.											

Counties below the falls not marled or limed but to very slight extent—Greensville not at all.	Sussex.	Whites,	4,771	4,532	4,336	4,155	4,118	3,584	3,084	-	-	500	14
		Free negroes,	391	542	582	684	866	810	738	-	-	72	8 8-9
		Slaves,	5,387	5,988	6,344	7,045	7,736	6,835	5,992	-	-	843	12¼
		Total population,	10,549	11,062	11,362	11,884	12,720	11,229	9,814	-	-	1,415	12¼
		Slaves above 12 years,	-	-	-	-	4,216	3,960	3,470	-	-	490	12 2-5
		Horses and mules,	-	-	-	-	2,061	2,071	1,672	-	-	399	18¼
	Southampton	Whites,	6,312	6,461	5,982	6,127	6,573	6,171	5,940	-	-	231	3¼
		Free negroes,	559	839	1,109	1,306	1,745	1,799	1,827	28	1¼		
		Slaves,	5,993	6,625	6,406	6,737	7,756	6,555	5,755	-	-	800	12¼
		Total population,	12,864	13,925	13,497	14,170	16,074	14,525	13,522	-	-	1,003	7
		Slaves over 12 years,	-	-	-	-	4,157	3,675	3,265	-	-	410	11 1-6
		Horses and mules,	-	-	-	-	2,831	2,640	2,203	-	-	437	16¼
	Greensville.	Whites,	2,530	2,398	2 254	2,056	2,104	1,928	1,725	-	-	203	10¼
		Free negroes,	212	213	omitted	280	332	136	136				
		Slaves,	3,620	4,116	4,599	4,512	4,681	4,302	3,766	-	-	536	12¼
		Total population,	6,362	6,727	6,853	6,848	7,117	6,366	5,627	-	-	739	11¼
		Slaves over 12 years,	-	-	-	-	2,497	2,365	2,134	-	-	231	9¾
		Horses and mules,	-	-	-	-	1,412	1,363	1,082	-	-	281	20¾
Counties the most extensively marled or limed of all in Virginia—Prince George the most and longest.	Pr. George.	Whites,	3,387	2,795	3,101	3,119	3,069	2,692	2,671	-	-	21	0¾
		Free negroes,	267	250	463	588	700	469	516	47	10		
		Slaves,	4,519	4,380	4,486	4,323	4,598	4,114	4,408	394	9¾		
		Total population,	8,183	7,425	8,050	8,030	8,367	7,175	7,595	420	6		
		Slaves over 12 years,	-	-	-	-	2,617	2,390	2,703	313	13 1-10		
		Horses and mules,	-	-	-	-	1,200	1,254	1,372	118	8 2-5		
	Charles City.	Whites,	2,084	1,954	1,776	1,750	1,782	1,671	1,656	-	-	15	1
		Free negroes,	363	398	387	538	761	670	780	110	16¼		
		Slaves,	3,141	3,013	3,023	2,967	2,957	2,433	2,764	331	13¼		
		Total population,	5,588	5,365	5,186	5,255	5,500	4,774	5,200	426	9		
		Slaves over 12 years,	-	-	-	-	1,531	1,386	1,567	181	13		
		Horses and mules,	-	-	-	-	775	814	994	180	22 1-9		
	James City.	Whites,	*1,519	1,374	1,354	1,017	1,283	1,325	1,535	210	15¼		
		Free negroes,	146	168	420	467	572	507	624	117	23		
		Slaves,	2,405	2,389	2,320	1,677	1,983	1,947	1,905	-	-	42	2
		Total population,	4,070	3,931	4,094	3,161	3,838	3,779	4,064	285	7¼		
		Slaves over 12 years,	-	-	-	-	†1,002	1,011	999	-	-	12	1 1-6
		Horses and mules,	-	-	-	-	†384	505	554	49	9 5-6		

* The population of James City, according to every census, includes the part of the village of Williamsburg lying in that county.
† The slaves over 12 years, and also the horses, belong entirely to the county—none of Williamsburg included.

III.

ASSESSED VALUES OF LANDS AND BUILDINGS.

Counties.	Acres of land.	Assessed value per acre (averaged) in				Assessed aggregate value of buildings in	
		1781.	1819.	1838.	1850.	1840.	1850.
Dinwiddie,	322,215	$1 37	$7 15	$3 76	$3 80	$305,332	$310,451
Amelia,	221,215	1 46	7 98	6 92	6 05	297,650	248,775
Nottoway,	197,518	1 45	8 20	6 09	3 61	289,956	296,397
Sussex,	295,330	1 64	5 19	4 08	3 06	263,905	243,004
Southampton,	365,498	1 67	4 75	4 15	2 96	376,559	327,607
Greensville,	184,085	1 56	6 13	4 69	2 82	204,212	117,430
Prince George,	180,100	1 50	6 31	5 57	7 50	209,732	252,877
Charles City,	111,142	1 50	8 90	7 10	7 75	152,035	169,688
James City,	91,683	1 57	4 01	4 74	6 20	88,078	109,690

IV.

INCREASE OR DECREASE OF LAND TAX, AT THE SAME RATE, AND OF AGGREGATE TAXES, AS INCREASED IN SUBJECTS AND RATES, TO 1850.

Counties.	Increase or decrease of tax on lands and buildings, from 1840 to 1850.		Aggregate taxes, payable in 1840.	Aggregate taxes, payable in 1850.	Increase or decrease of taxes from 1840 to 1850.			
					Aggregate		Per cent.	
	Increase.	Decrease.			Inc.	Dec.	Inc.	Dec.
Dinwiddie,	$8		$3,105	$3,596	$580		19	
Amelia,		$206	3,573	3,651	77		2	
Nottoway,		91	2,855	3,236	381		13⅓	
Sussex,		273	3,257	3,224		$32		$1
Southampton,		376	3,706	4,993	1,287*		34⅓*	
Greensville,		339	2,501	2,949		551		22
Prince George,	237		2,426	3,508	1,082		44⅓	
Charles City,	67		1,521	2,169	647		42½	
James City,	137		1,002	1,335	333		33	

* This astonishing increase of tax paid by Southampton ($1286 91) was nearly embraced in the single item of $1,216 05 tax in 1850 on the collateral succession to a large estate. No other case of this rare tax appears for either of the other counties, and of course this has no relation to comparative existing values of property. Deducting this one payment (as it ought to be in this estimate,) and Southampton will show only the small increase of $70 86 of aggregate taxation.

A careful and thorough examination of the foregoing tables will make manifest the truth of the positions I have assumed. It is only necessary for this proof, to admit as premises the notorious facts that three of the counties have marled or limed extensively, and some of the other six very little, and the others not at all. But as such thorough examination of numbers and figures would be laborious and wearisome to most persons, I will call attention, concisely, to some of the most important evidences in these tables.

TABLE I.—*Agricultural Productions of* 1840 *and* 1850.

The first named *six* (or non-marling) counties contain of cleared land (or "improved" as named in the census reports,) 631,007 acres—and the other *three* (or marling and liming) counties, 114,985 acres—the proportion of space being as 1 of the latter to very nearly 5½ of the former.

Grain (of all kinds taken together) makes the largest product of each of *all* the 9 counties.

Tobacco is a subject of large culture in all the *six*—but not in either of the *three* within the time embraced in the reports—and is the most important culture, except grain, in Dinwiddie, Amelia, and especially in Nottoway. Cotton has been a large culture in Sussex, Southampton and Greensville, and still is so, though much reduced in amount of production.

Peas make a subject of large culture in Southampton—and approaching to large in Sussex and Greensville. But as this crop was not named in the census report for 1840, there is nothing for comparison with the reported products of peas for 1850, so as to show increase or decrease. In the other counties this is a small, but now increasing culture.

Potatoes, of both kinds, are crops of small culture in all the 9 counties, except in Southampton and Sussex, where the culture is much more important—and the extent of both cultures has been increasing in all.

Orchards, for market products, were subjects of large culture and production in Sussex and Southampton, and of importance in all others of the *six* counties—but only in Charles City of the *three*. All these products were reduced almost to nothing by 1850, by abandonment of the culture, and substitution of others. The decrease is very important in diminishing the general products of Sussex and Southampton only.

Dairy products belong to very small culture in all the 9 counties. They were entered in different manner in the reports of 1840 and '50, so as not to be compared; and in both cases apparently so loosely and inaccurately, that nothing can be learned from them. Therefore they are omitted here.

Of the *six* (non-marling) counties, from 1840 to 1850, each has decreased in the total production of grain, except Dinwiddie; and the increase of grain for Dinwiddie is of far less amount than the decrease of tobacco, cotton and orchard products. In total production of crops, all the *six* have decreased.

Of the *three* (marling) counties, each has increased, and largely, in total products, and especially in grain. The only decrease of products shown is of subjects of small culture, abandoned partially or entirely, since 1840, for more profitable objects.

The *six* counties have all decreased, and largely, in the production of tobacco and cotton—one or the other of which was a subject of large culture in all these—but in neither of the *three* (marling) counties.

Gardening for market had place only in Dinwiddie ($5753) and Prince George ($3336,) and was stated for 1850 only, in the census report.

TABLE II.—*Population and Laboring Force.*

Of the 9 counties, 7 had less total population in 1850 than at the earliest separate enumeration, which was in 1800 for Dinwiddie and Nottoway, and in 1790 for the other 5. The only 2 exceptions of increase since 1790, are Amelia and Southampton. Amelia increased from 1800 to 1850 by 323 only. Southampton, from 1790 has decreased in whites and in slaves; but the free negroes have more than tripled, so as to make a small numerical increase in the total population. Each of the *six* (non-marling) counties has also decreased in total population from 1840 to 1850—thus indicating a still progressive decrease.

Of the *three* (marling) counties, each also has declined in total population from 1790 to 1850. But contrary to the other *six*, each of these *three* has gained, and considerably, in the latter time, from 1840 to 1850—indicating a now growing population. This is a certain, but not an immediate nor always a very early consequence of increased agricultural production and general wealth.

There is a difference worth notice in the manner and progress of these different counties arriving at the general result of total population being less in 1850 than at the earliest census, either 50 or 60 years before. The *three* marling counties, on the average, and with some fluctuations, and notwithstanding recent increase, have each decreased from 1790. This would show that they were impoverished even before 1790, and had then reached nearly as low a condition of production as 30 or 40 years later. But the other *six* counties, being more lately settled, were less exhausted and impoverished, and therefore increased in population to a later time. The maximum population of each, as shown by the census reports, (and in Table II,) was either in 1820 or 1830; after which the decline began and has continued.

TABLE III.—*Assessments of Lands and Buildings*

In the earliest stated assessment, (1781) the three counties Prince George, Charles City and James City, even then were valued much lower than Sussex, Southampton and Greensville, taking each three together. This shows that even then the lands of the latter must have been far less exhausted, and much more productive. For, if even then equal in production, there were obvious grounds of preference for the counties on James river, which would have caused them to be rated higher than the other three. Again—Amelia and Nottoway, of unquestionably greater natural fertility, and then but little exhausted, were then rated lower than any one of the lower-lying counties—thus indicating the then comparatively recent settlement of the upper counties, and therefore less appreciation, and for that reason only.

From 1819 to 1838, all the *six* (unmarled) counties decreased in values of lands; and also from 1838 to 1850, except Dinwiddie, of which the last assessment of lands was higher by 5 cents the acre only. From 1840 to '50, the latest assessments of buildings, in these *six* counties the values had decreased, except Nottoway, of which the value of buildings had slightly increased.

The *three* (marling) counties had also de-

creased in value of lands from 1819 to 1838, except James City, of which the assessment was increased, and which was doubtless the result of the then already extended marling. If the assessment had been made from 1820 to 1828, instead of so late as 1838, a much lower rate of value would have been assessed for all these three counties, and, from this lower depression, a much higher advance afterwards to the actual assessment of 1850. As it was, from the actually much advanced values of 1838, there was still a much higher advance of each of these three counties to the assessment of 1850. The value of buildings in all the *three* increased largely from 1840 to 1850.

TABLE IV.—*Increase or Decrease of Public Revenue.*

As proportioned to the assessments, the taxes on lands and buildings, at the same rate, for the *six* counties have all decreased from 1840 to '50, except in Dinwiddie—for which these taxes have increased $8 only for the whole county. Deducting this from the decrease on the other five ($1285) leaves the net decrease of these taxes, for the *six* counties, $1277. The same taxes on the *three* counties have increased in proportion to their assessments, making $441, on these two subjects. Now if the *six* counties had made equal increase of their taxation on lands and buildings in proportion to their greater extent of arable or cleared land, their joint increase would have been ($441×5¼=)$2425, instead of the actual decrease of $1277. The difference to the treasury between losing the amount of decrease, and gaining the increase, annually, is equal to these two amounts added together, or $3702, on lands and buildings only, and at the same rate of taxation.

But these two taxes have latterly been increased in rate, and many other subjects added previous to 1850, and of which the products are shown in the aggregate taxes of that year. This actual and aggregate taxation will show a still stronger contrast. In aggregate taxes, the total increase from 1840 to 1850, of Dinwiddie, Amelia and Nottoway amounted to $1038

Sussex, Southampton, (omitting the one tax of $1216 on the rare and single case of the collateral inheritance of a large estate) and Greensville, taken together, decreased in amount of payments of aggregate taxes, by the joint sum of $512—which deduct, 512

Showing a net increase of $526

The increase of aggregate taxes on the *three* marling counties amounted to $2062. If the *six* counties paid equal increase in proportion to their greater extent of cleared lands, their increase would be ($2062×5¼=) $11,341 paid of increase of aggregate taxes, or more than 21¼ times as much as the actual increase of $526. And this is the balance of gain to the treasury alone, and from these *six* counties only, which would now accrue if these counties had been improved as much as the three marling counties. As Prince George shows more increase of aggregate taxes than Charles City, and much more than James City, if the comparison was made with Prince George only, it would exhibit a still stronger contrast of that county with the six non-marling counties, than when the three marling counties, as above, are averaged and estimated in conjunction.

The suits instituted in the Superior Courts of Law and Chancery, in each of these counties, for the last two years for which full reports were made to the late State Convention, were as follows:

	Year ending Aug. 30, 1847.	*Do.* 1848.
Dinwiddie,	56	97
Amelia,	96	124
Nottoway,	107	117
Sussex,	39	33
Southampton,	73	150
Greensville,	33	41
Prince George,	14	21
Charles City,	15	28
James City & Williamsburg,	89	108

There being one court and clerk's office for James City and all Williamsburg, of which about one-half is in York county, the suits for both are (improperly) included in the above numbers, as reported to the convention.

As general results, these tables of statistics exhibit, in all the counties named, the like long continued and general decline—and also, recently, that, while the extensively marling and liming counties have begun to recover as soon as they used these means for improvement, the other counties have continued to decline to the latest time—and most of them with accelerated downward progress. The accordance of decline in all, for the first long time, and the remarkable difference and contrast of some, in their more recent growing prosperity, cannot be ascribed, with any color of probability, but to one known and sufficiently operating cause—the extensive use of calcareous manures in these prosperous counties and the new productive power thus notoriously created, and the either very general or entire neglect of the use of such means in the other counties. The long continuance and the extent of decline, and which would have been universal but for these means of remedy as yet but partially used, will appear, as here displayed, more impressive and more alarming to the observer, than had been noticed before thus separating and contrasting the counties the most different in latter times, though the most alike in former, in downward career.

These facts and deductions suggest a subject of consideration of the most momentous importance to the public welfare. The lapse and experience of sixty years have shown no change, nor hope for change, in the regular decline of fertility caused by the ordinary exhausting cultivation of much the larger por-

tion of lower Virginia. At last, one sure safeguard against the impending ruin, and, so far, one only, has been adopted; and though used but partially, insufficiently, often injudiciously, and sometimes injuriously, this defence has been found adequate, not only to stay the injury to the soil and its production, but to induce immediate reaction, and rapid improvement, soon reaching and surpassing the highest original state of productiveness, and followed by the certain consequences of proportional increase of general wealth, population, and public revenue. Can any subject be more worthy the consideration of a wise government, or of securing its aid to arrest the continuing evils, and promote the effects of the means for benefit to the best interests of agriculture, and of the commonwealth?

The legislature of Virginia, representing an almost exclusively agricultural people, has never directed the expenditure of a dollar to forward these great benefits to public interests already achieved by means of agricultural improvement; or to invite, by collecting and diffusing information, the hastening of the incalculably greater benefits of like kind to be secured by proper action. The legislature has refused any aid to the obtaining of information for this great object, even when to be at no cost to the treasury. Yet the treasury now receives annually more than $17,000 in the increase of land tax alone (independent of any increase of the rate of that tax,) upon the increased assessed value of the marled and limed farms of lower Virginia. Thus, while denied all substantial aid, and even costless instruction, the farmers who, struggling against all the difficulties of their want of knowledge, have created this new value to their country, are made to pay as a penalty for that service, the annual fine of more than $17,000 to the treasury. By the despotic government of the semi-barbarous people of Russia it has been deemed wise policy to exempt new and important agricultural improvements from all taxation for a long term of years. But the government of Virginia, while refusing all aid to agricultural progress, taxes to full extent all newly created values arising from agricultural improvements, as soon as their existence can be ascertained by assessments. If merely the new supply of such revenue, derived from the newly created values of marled and limed lands alone, were given to aid general agricultural instruction and improvement, it would serve not only to promote both private and public interests beyond estimation, but would also return to the treasury itself all the amount thence derived, with more than ten-fold increase.

The Dahlia was discovered in Mexico, by Humboldt, in 1798, and sent by him to Madrid, where it received its name in honor of the Swedish naturalist, Dahl.

For the Southern Planter.

JOINT WORM.

Mr. Editor,—In a former communication written for your journal, the publication of which I subsequently countermanded, I described the four-winged insect which emerged this spring from the galls produced by the "joint worm" on the sheath of the wheat stalk of last year's growth. In every instance, and I examined more than a hundred, the insect proved to be a hymenopter of the family *Cynipidæ*, or *gall flies*. One section of this family, embracing the genus *Diplolepis*, to which the gall fly of the common oak apple growing on the leaves of the red oak belongs, consists of vegetable feeders living on the tissue of the gall created by their punctures. A second section consists of carniverous parasites which deposit their eggs in the galls raised by the action of the *Diplolepis*, or other insects of similar habits, so that their larvæ may subsist on the latter. To my surprise the new wheat fly had the external characteristics of a genus belonging to the section of carniverous Cynipidæ, and yet as this fly alone was discovered, it seemed extremely improbable that the real author of the mischief was a different insect, and that *in every instance* the true culprit had been destroyed by a parasite. Accordingly, I had no hesitation in ascribing to this fly the habits of a Diplolepis, although it possessed the *artificial* characters of a carniverous *Cynips*. Adopting the nomenclature of Lamarch, who had united into one several of the genera of *Latreille*. I referred this insect to the genus *Cynips*, and applied provisionally the specific name *Vaginæ Tritici*, as indicating its apparent predilection for the sheath of the wheat stalk. A few days later I met with a copy of Dr. T. W. Harris' "Report on Insects injurious to vegetation in Massachusetts," in which is described a disease of barley apparently very similar to that which has been recently so destructive to the wheat. In this case, too, *all* the perfect insects which emerged from the diseased barley were Cynipidæ, which Dr. Harris referred to the genus *Eurytoma*, (Latreille) one of the genera which Lamarch reduced to his *Cynips*, as being distinguished by differences too trivial to justify a generic distinction. It now appears that our new wheat fly is identical with Dr. Harris' Eurytoma of the barley, and accordingly should receive the appellation which he first gave to it, *Eurytoma Hordei*.

The point of greatest interest is, however, yet undetermined. Is this Eurytoma, contrary to the general opinion of entomologists, capable of subsisting on vegetable matter, which must be the case if it be the original and true culprit, or is it a parasite, and if so what insect produces the galls, and is then devoured by the Eurytoma? It being known that several species of Eurytoma destroy the Hessian fly, Dr. Harris thought it probable that the insect which produced the new disease was a new species of *Cecidomyia*, which afterwards fell a prey to the carniverous *Eurytoma*. This opinion is also adopted by Dr. Fitch, of New York, who had somewhat doubtfully identified the "joint worm" as the larva of a *Cecidomyia*. Repeated observations made at short intervals during the spring and down to the present time on the wheat of this year's growth have gone far to confirm my first impressions, that the mischief is produced exclusively by the Cynipidæ, and that no *Cecidomyia*, or other *Dipterous* insect, has had any agency in the matter. I find at least two kinds of worm in the diseased excrescences. One, found in a very large majority of the cells, is yellowish, smooth and very sluggish. The other white, hairy, and very active in its movements. This last is a parasite. In several instances it was found in the same cell with an individual of the first kind, and feeding upon it, but it was found at all times in an exceedingly small proportion of cases, say one in twenty or thirty. In the structure of the head and mouth they resembled one another, and both were identical in this respect with the unequivocal larvæ of the four-winged gall flies of the oak. In view of this fact, taken in connexion with the statements already made, that in *every instance* in which a perfect insect has been observed to emerge from the diseased wheat, it was found to be a four-winged Hymenopter. I must hold, at least until another fly is produced, that entomologists have made a premature generalization in ascribing exclusively carniverous habits to the group of insects to which the Eurytoma belongs.

Dr. Harris, in a recent letter to you, suggests that a portion of the larvæ may undergo transformation during the first summer, unaffected by the parasite, while the other portion, infested with parasites, may remain unchanged till the following spring, and then give issue only to the parasitical Eurytoma. In the progress of my recent observations I have met with three or four instances of complete transformation this summer, but in every case the insect was a *Eurytoma*, of which, in addition to the Eurytoma Hordei, I found two new species, one of which was conspicuously characterized by bright red eyes. In many more instances I found the insect in the pupa stage, and exhibiting that form of a pupa which is characteristic of the Hymenoptera.

By pursuing these observations a few weeks, or, at most, a few months longer, the question will, doubtless, be finally settled. I had intended to defer the publication of my conjectures until such complete investigation should have tested their value, but for your suggestion that their present publication would serve to direct the attention of other observers to a subject, of much interest to the wheat growers, and thus increase the chances of obtaining a valuable result.

J. L. CABELL.

University of Virginia, July 26, 1852.

A NEW MODE OF FENCE BUILDING.—Being desirous to add my mite for the benefit of my brother farmers, I describe my mode of fence building. In the first place I set a good post, seven feet four inches in length, two feet four inches into the ground, leaving five feet above ground. I then drive a stake beside the post, at sufficient distance to admit a rail, then lay in two rails. I now twist a wire firmly around the post and stake, then put in two more rails, then another wire, completing the fence with two additional rails, making six in all. I take the precaution to sharpen my posts as they take their places more readily when thrown by the frost. I have had this fence standing on my farm for four years, and it proves to be cheap and substantial. My neighbors have also tried it, and found it in all respects satisfactory.—*Albany Cult.*

RECIPE FOR WHOOPING COUGH.—Dissolve thirty grains of salts of tartar in a gill of water, add to it ten grains of Cochineal finely powdered, sweeten this with fine sugar. Give an infant a table-spoonful four times a day. To a child two or three years old, two tea-spoonfuls; from four years and upwards a table-spoonful or more may be taken. The relief is said to be immediate and in general within five or six days.

THE SOUTHERN PLANTER.

RICHMOND, SEPTEMBER, 1852.

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SMUT IN WHEAT.

We have learned from various sources that this disease of wheat has done great damage in several portions of the State, in some cases ruining the whole crop, and in others injuring it very seriously. We have been requested to write an article on the subject by a good many of our friends, and a correspondent from Campbell, I. H. W., propounds the following queries, which, as covering the whole ground, we shall make the basis of this article:

1. What is the nature of smut, and its cause?
2. Is there any preventive of it?
3. Can it be propagated from crops that have it to crops that have not, by threshing the latter with the same machine with which the former was threshed?
4. Is it peculiar to particular varieties of wheat, and if so, to which?

Premising that we have no experience in the matter, having never discovered but two heads of smutted wheat in all that we have made, we will answer the above queries without regard to the order of interrogation.

Smut is nothing more or less than a microscopic, parasitical fungus, or mushroom, of the same species with those which grow in the fields and other situations where they are commonly observed. It was for a long time questioned whether this order of plants, of which there are 2,400 species, belonged to the family of vegetables or animals, but it has now been demonstrated to be a vegetable, though of a sort which, like the sponges, links the animal and vegetable races. The species which constitutes the smut in wheat,—perhaps others also,—is composed, to a very considerable extent, of a substance precisely like putrid gluten; and gluten is the characteristic ingredient of wheat, and chemically, though not in form, the same substance with animal gluten, or, as it is more commonly called, albumen. Hence the liability of wheat to be attacked by this fungus, and hence also the dispute as to the appropriate kingdom of the fungus.

Upon shaking or striking with the hand a smutted head of wheat, a quantity of dust will be observed. This dust is composed of the microscopic seed of the fungus, *uredo segetum*, as it is called, and there are millions of them in each head of smut. The same thing

may be observed upon bursting the common mushroom, or puff balls, of our fields; the purplish dust which rises is the seed of the plant.

Numerous experiments have clearly ascertained two modes by which these seed may infect the wheat—by absorption from the soil, in which case the seeds ascend along with water taken up by the roots of the plant—and by infection from seeds of wheat that have by some means got into contact with this powder, which adheres to it. The last is the most frequent cause. In either case the plant is poisoned, not only in the head, but in the straw also, which is reduced in product some eighteen per cent. It is, in fact, an organic disease which attacks and injures the whole plant, though the greatest damage is done to the grain. Of this it does not seriously affect the saline or inorganic constituents, but it prevents the formation of starch, as is known from the facts that none is ever found in smut heads, and that the fecula is never affected by the dust when treated with it independently; and it decomposes the remaining organic or vegetable particles, which consist mainly of gluten. It requires the nicest chemical examination to decide whether it putrifies the gluten, or consumes and appropriates it, since there is but a shade of difference between its substance and putrified gluten.

The countless millions of its seeds existing in the shape of finest dust, wafted about by every breeze, and not easily destroyed by the agency of the seasons, are scattered over the land ready to poison, by absorption, the crops which from some cause may be predisposed to the malady, and having once got hold on the grain, it is rapidly propagated by contagion. That these seed do always exist in the soil is not probable, though the fact of their presence or absence is not ascertained. Those of the rust, which is a plant of the same family, certainly do; but the intermittent and less universal attacks of the smut would seem to warrant the opinion that it is neither so hardy, prolific, or pervasive. What may be the exciting cause of its attack is not known. There are numerous opinions on the subject; but its prevalence in various seasons, over large districts containing every kind of soil, exhibiting great diversities of culture, and presenting many varieties of wheat which it seems to fasten upon indifferently, seems to forbid the ascription of it to the usually assigned causes, and would appear to require more accurate and continuous observation than has heretofore been given to it.

The specific remedy for infected seed wheat is somewhat troublesome, but very simple, and certain in its operation. It consists in steeping the wheat just previous to sowing in certain solutions which destroy the vitality if not the structure of the smut seed. Mr. Bevan, an Englishman, has made several accurate experiments with various steeps. It is not necessary to state those experiments in detail: it is sufficient to mention that specimens of smutted wheat steeped in solutions of common salt, soot, lime saturated, muriatic acid, and sulphuric acid, each produced crops free from smut. Of these, salt, as being cheapest, most common, and most easily handled, is altogether the best. It is used in this way: the wheat is first washed in pure water which is to be poured off along with all the floating grains. Then it should be soaked twelve hours in brine made strong enough to float a hen's egg. It should be then taken out and rolled in slaked lime until the grains becoming coated with it cease to adhere and can be easily scattered by hand. The lime steep is made by mixing one pound of fresh lime with three gallons of boiling water, and in that proportion for any quantity that may be wanted, pouring off the clear liquor and using it immediately. The seed to be rolled in lime as above. In both the above cases the wheat ought to be frequently stirred that the surface of each seed may be well washed.

We have seen in one of our exchanges a statement made by a gentleman in South Carolina of an effective steep made of bluestone. We have written to that gentleman requesting his recipe and his practice, and shall publish it if we get it.

Repeated washings in pure water are also said to be effective, but as the water must be changed at each washing the process is a very troublesome one.

We have heard that some gentlemen in Prince George who have used these solutions not as steeps, but as a mere wash, have had the smut very much curtailed, but have failed to have a good stand of wheat in consequence of the swelling and drying which prevents

the germination of a good many of the grains of wheat. To a certain extent this is to be expected. But we should apprehend less harm of this sort from a thorough soaking than from a superficial wetting, because the grain would dry much sooner in the latter case. It is within the observation of every wheat-grower that if a slight shower occurs during seeding, barely wetting the surface of the ground, but not stopping the work, that the wheat which was dampened by the same rain, or by being immediately enveloped in the moistened surface, vegetates very feebly if a drying sun follows and evaporates the moisture, because the incipient germination has been checked. Would this have happened if the grain had been thoroughly wetted so as not to dry out so easily? We think not. Nor would it, in our opinion, occur in ordinary seasons unless continued dry weather should supervene, such as injures the stand of wheat at all times. But if we are mistaken in this opinion, which ought rather to be called a suggestion, there are still two conditions which may, to a great degree, if not entirely, obviate the risk—ploughing the wheat in pretty deep, say about three inches, so as to place it beyond the influence of ordinary droughts, and adding seed enough to compensate the calculated deficiency, a safe approximation to which may be easily obtained by first steeping a given number of seeds the required time, then sowing them in the way the crop is to be sowed, and counting those that come up. But however all this may be, the smut must be got rid of, and we know no other mode of doing it.

Particular care should be taken after the wheat is removed from the steep not to spread it upon a floor which has been previously occupied by smutted wheat until it has been thoroughly scoured first with pure water, and then with brine as strong as the steep itself, as otherwise it would be liable to infection from the powder which might remain on the floor. The walls ought to be washed in the same way, or, preferably, whitewashed.

As preventives we would advise that wheat should not be sowed on the stubble of a preceding smutted crop, that the crop should not be manured with the straw of a smutted crop, and that the machine should be thoroughly cleansed before threshing, as the dust of the preceding crop may, and probably will, convey the infection.

This is all we can gather on the subject that we deem it necessary to communicate. The processes may seem tedious, but we believe them necessary to cleanse a crop thoroughly, and we think time will be well spent if it accomplish that object, as smut is the vilest pest that can infect the wheat crop. Having no personal experience, we can of course say nothing with absolute certainty. But the confidence with which we would recommend these remedies and preventives, gathered from such books as we have access to, is strengthened by the assurance of a neighbor that his crop was completely purged of smut some few years ago by brining and liming as above. If others shall succeed in consequence of what we have written, as we are very sure they will, we request as a favor that they will communicate the source of their good fortune to that thick-headed and prejudiced class, the anti-book farmers, who act as if they thought every truth became a lie as soon as published in an agricultural newspaper.

I. H. W. (whose compliments, by the way, are duly appreciated, only we wish he had backed them by a handsome list of subscribers—we like pudding better than praise,) informs us that one of his neighbors did not mean to thresh his wheat, but would feed the whole of it to his hogs. We would thank him to note the result carefully and communicate it to us. It is by no means certain that it will be a very good food for them. Most of the fungi family are poisonous, and it is known that horses, and even people, fed on spurred rye, or rye infested with ergot, which is another fungus of the same family, have been killed by it. If the wheat was threshed and then brined we should not anticipate any danger; nor do we know that there is any at all. We merely suggest it as a possibility.

Another of our correspondents inquires for a good smut machine. The Rev. Walker Timberlake, to whom we applied on this head, says that Messrs. Wilson & Funk of Winchester, manufacture a machine, which he considers effectual. "It costs one hundred and fifty dollars, makes eight hundred revolutions in a minute; has been running six years, and has never been repaired." He advised a

friend to get one of a much smaller size, costing, he thinks, half as much, and he informed him afterwards that he had no further use for any other machine to clean his wheat.

And this is "all the information we can get on this subject." We hope it may prove satisfactory to our friends.

ANSWERS TO CORRESPONDENTS.

It is very desirable that gentlemen asking information should furnish their names. Sometimes it is unnecessary to *publish* replies, and yet we are forced to do so because we cannot write a private letter from ignorance of the querist's name. Sometimes, too, we desire to communicate further with our unknown friends. Whenever it is necessary to publish the letters that we may get information which we do not happen to possess, we can suppress the name whenever it is desired.

"A James River Farmer" desires to know how guano will operate on very salt reclaimed marsh land—land that has been reclaimed for ten years, and now brings very fine herdsgrass. Whether the land is too wet for grain is not stated, and yet that is a very important condition. If it is, we should think it hardly worth while to sow guano on the grass, as the moisture and vegetable matter in the land seem now sufficient to produce a maximum crop of grass. If it is dry enough for wheat or corn, and rich land, we would think it useless to apply guano, as on very rich land it rarely pays well. The saltness of the land we would not regard at all. It is recommended sometimes to sprinkle salt and water over manure for the purpose of retaining the ammonia, which, it is said, becomes changed thereby from a volatile to a fixed salt—from the carbonate to the muriate of ammonia. We do not know if this is so, but we should apprehend no danger from the presence of salt.

But we beg that our opinion in the above shall not be relied on, but that accurate experiments shall be instituted to test the matter. We may be mistaken; for instance, in the opinion that guano pays badly on rich land. There are facts on the other side that we occasionally hear of, such as this: we learn that Mr. Richard Sampson, of Goochland, applied guano on some of his best low grounds, and thought it a failure. He put on no more for a year or two, until having a small portion left over one fall, he sowed it again on the low grounds and made greatly superior wheat on the land.

I. H. W. of Campbell county, and others, will find their inquiries on smut answered in the leader of this number. They would have been answered in the August number, but we had neither time nor space. They are answered now in good time.

CHINA FOWLS.

Our thanks are due to Mr. Chas. Sampson of West Roxbury, Massachusetts, for the very acceptable present of a pair of these fowls. They came safely to hand per steamer Roanoke. Judging from these, and from some very fine specimens shown us some time ago by our friend, Mr. Butters, (at Nash & Woodhouse's bookstore,) we believe this to be a very superior stock, certainly the largest and finest we have ever seen—and we think poultry-raisers would do well to supply themselves with some of this breed. See Mr. Sampson's advertisement in another page.

P. D. B.

GREAT SALE OF SHORT HORN CATTLE.

We call the attention of our readers and particularly those who are improving their breed of cattle, to the advertisement of Mr. George Vail, in another column. The high reputation of his herd renders any remarks from us in reference to it unnecessary. Catalogues of the sale can be had on application in person, or by letter, at the office of the Southern Planter.

Oat Straw.—A writer in a June number of the Farm Journal, gives his experience of the injury of oat-straw, when fed to milch cows. He states that in the early part of June his cows ate of the oat straw litter, and, although fresh, their milk immediately failed, and was not restored until the cattle were entirely excluded from the straw. This, we believe, accords with the universal opinion among farmers, of the deleterious effects of this straw upon cows in milk; but it is well enough to

mention the fact, in order that, through inattention, others may not suffer from negligently allowing their cattle to feed upon it.—*Germantown Telegraph.*

For the Southern Planter.

GUENON'S THEORY OF THE MILCH COW.

All mankind, and farmers more especially, are prodigiously afraid of the monster, humbug. Nor is this surprising, considering the constant vigilance necessary to guard us against his insinuating machinations in the countless shapes in which he appears, in the moral, political and agricultural world.

Prudence (always commendable) will nevertheless dictate the importance of investigating the claims of what professes to be a new discovery or invention, before the stigma of humbug is fixed upon it. It has been the fate of most of the grand discoveries, to which the world owes its present state of civilization, in their early history, to be pronounced humbugs, and so it will continue to be to the end of time.

A few years since a work was issued from the press, called "A Treatise on Milch Cows, whereby the quantity and quality of milk which any cow will give, may be accurately ascertained by observing natural marks or external indications alone; the length of time she will continue to give milk, &c. By M. Francis Guenon, of Libourne, France, and translated for the Farmers' Library, by N. P. Trist, Esq. late United States Consul at Havana." This work on its first appearance attracted the attention of a few individuals who took the pains to study it; but to the community at large it seemed difficult and inexplicable, and therefore was set down as a humbug. The author of this work has consumed about twenty years in perfecting and systematizing his discovery, which has been subjected to the best tests by the distinguished agricultural societies of France, who have awarded him gold medals, as may be seen by reference to the work. A discovery that will teach us to choose between cows that will yield six gallons of milk and those that give one quart per diem—to distinguish those that give milk during the whole time of pregnancy from such as go dry as soon as impregnated—by external marks, is surely one of the greatest of the age.

But does any one believe it? I must confess that, after two years' investigation and practice, I see very little to shake my faith in the accuracy of the science, and that where I have been at fault in pronouncing upon a cow, it has invariably grown out of my own inattention or ignorance of the subject.

According to Guenon, cows are divided into eight classes, each having a general and distinguishing mark. These are again subdivided into eight grades of each class, with a mark which fixes the rank of the cow in her class. Cows are also divided into three classes, according to size, viz: high, medium and low.

He has given a name to each class, which is altogether arbitrary, but most generally suggested by a resemblance of what he calls "the escutcheon" to the thing whose name it bears.

There occur in all grades of every class what he calls "bastard" cows, who go dry immediately on being impregnated. These have likewise their distinguishing mark. The marks exist on a calf as soon as it is born, and may be defined at two months old, both on male and female. We may, therefore, always know whether to retain any calves for breeders or turn them out for beef.

The book contains plates exhibiting the marks of every grade, of every class, and tables showing the quantity of milk, and the length of time each will give milk after being impregnated.

A considerable degree of practice is necessary to acquire a perfect knowledge of the subject and to retain a distinct recollection of all the marks.

Some persons show a great fondness for, and facility in, learning the marks, and are much astonished at their accuracy. There must be a perfect combination of all the marks, before the character of a cow can be known, and the rates for milk are based on the supposition of perfect health, maturity of age, and abundance of food. Under these circumstances, his standard will often be found too low.

Let the learner take the book and first make himself familiar with the distinguishing mark of each class. He can then learn the marks which fix the grade in each class. He must then learn the bastard marks, and the task is done.

The improved English breeds have a much larger proportion of well marked milkers than the common stock, which is a strong evidence of the truth of the theory.

To persons desirous of conducting the dairy business, is this discovery of paramount importance, for upon the proper selection of cows depends the whole question of profit or loss. The difference between a cow which yields eight hundred gallons and one which yields fifty gallons of milk per annum, is enormous, and yet such a difference exists, and can be pointed out by one familiar with Guenon's Theory. I will conclude by earnestly recommending this work to the *patient study* of all the readers of the Planter, and shall think "I have done the State some service" if I can rescue from oblivion one of the most valuable discoveries of modern times.

The book can be had in Richmond for less than one dollar.

A SUBSCRIBER.

For the Southern Planter.

SCIENTIFIC AGRICULTURE.

BY PROFESSOR GILHAM.

NUMBER II.

(Continued from page 228.)

OF THE NUMBER AND DIVERSITY OF BODIES IN PLANTS.

The substances produced by plants in their growth are very numerous, and are remarkable for the great diversity in their properties.—Almost every plant produces some substance peculiar to itself. Thus one tree produces turpentine; another gum; another India rubber; another camphor, &c. Some plants produce flowers that are fragrant; others produce flowers which exhale most offensive odors; some plants yield deadly poisons, while others yield substances which are remarkable for their medicinal virtues; some are cultivated for their leaves; others for their bark; others again for their stems; and others still for their roots. By a careful separation of the different parts of a plant, we find that there is scarce a single one which will not yield some fifteen or twenty different bodies, and many plants produce twice that number. But the substances which make up the great bulk of plants are few in number, and are common to nearly all. Those which give particular properties, such as taste, color, odor, &c. to particular plants, generally form but a small part of the whole mass, and too small to require the expenditure of much of the vital force of the plant in their production.

WOODY FIBRE, STARCH, SUGAR AND GUM.

The white insoluble mass which is left after boiling a piece of the stem of an herb, or a piece of the trunk of a tree, is named *woody fibre*. It has neither taste nor smell, is perfectly insoluble in water, and is nearly identical in composition, whether obtained from the fibres of common flax, hemp or cotton, or from any of the different kinds of trees. It is by far the most abundant product of vegetation. It is composed of the three elementary bodies, *carbon*, *oxygen* and *hydrogen*; or to express its composition more accurately by numbers, it consists of *twelve* atoms of carbon, *eight* of oxygen, and *eight* of hydrogen. Now water is composed of one atom of hydrogen and one atom of oxygen, and since the number of atoms of oxygen and hydrogen are equal in woody fibre, it follows that its composition may be expressed by saying that it is composed of *carbon and the elements of a certain number of atoms of water*.

If woody fibre is burned in the open air the oxygen of the air, and of the fibre itself, enter into combination with the carbon and hydrogen of the fibre, forming carbonic acid with the one, and water with the other. If, however, it is subjected to high heat in a close vessel, or one which will not admit a free access of air, the fibre undergoes what is called *destructive distillation*, and is decomposed; a portion of the hydrogen unites with oxygen, forming water; the other portion unites with carbon forming compounds known as the *carburets* of hydrogen; and that portion of the oxygen of the fibre which does not form water by its union with hydrogen, unites with carbon, forming carbonic oxide, and carbonic acid. But since there is a greater number of atoms of carbon than oxygen or hydrogen in the fibre, it follows that a portion of the carbon will remain in the form of charcoal, after the others have been driven off.

Starch is the next most abundant vegetable product. It possesses great value from its being one of the principal articles of food for man and animals, and from its occurring in large quantities in the grains and roots of cultivated plants. It may be gotten from a variety of sources, only two of which we shall mention in this place.

When the flour of wheat or rye is made into a dough and washed with water, and the milky liquid which passes from it is set aside and allowed to settle, a white powder is gradually deposited in the bottom of the vessel, which is *starch*. When the potato is grated upon an ordinary grater, or on graters arranged for the purpose, and the pulp thus produced is washed as before, the liquid gradually deposits *potato starch*.

Starch is a white granular powder, insoluble in cold water, but readily forming a ropy or pasty liquid, when thrown into boiling water. It is composed of *twelve* atoms of carbon, *ten* of hydrogen, and *ten* of oxygen; or like woody fibre, it may be regarded as *carbon and the elements of water*.

There are two kinds of sugar, *cane sugar* and *grape sugar*. Cane sugar is found in

great abundance in the juice of the sugar cane, the sugar maple, in the stalks of Indian corn, and in the juices of many plants and roots. Grape sugar exists in the juice of the grape, the gooseberry, currant, and many other fruits. Sugar is distinguished by its sweet taste and solubility in water. Grape sugar is not so sweetening in its properties, or so soluble, as cane sugar. The latter consists of *twelve* atoms of carbon, *ten* of oxygen, and *ten* of hydrogen; or its composition, like woody fibre and starch, may be expressed by *carbon and the elements of water.*

Grape sugar is composed of *twelve* atoms of carbon, *twelve* of oxygen, and *twelve* of hydrogen. This shows its composition to be somewhat different from that of cane sugar, but since the equality between the number of atoms of oxygen and hydrogen is kept up, it may likewise be said to be composed of *carbon and the elements of water.*

Gum is another very commonly occurring vegetable product. It exudes from the stems and twigs of trees, and is found in many seeds. When treated with hot water these plants and seeds yield mucillaginous solutions. There are many varieties of gum, but they are all characterized by their dissolving or softening in water, forming very adhesive bodies which may be used as paste. The different varieties of gum are all found to have the same composition, namely, *twelve* atoms of carbon, *ten* of oxygen, and *ten* of hydrogen; therefore, it too may be said to consist of *carbon and the elements of water.*

OF THE MUTUAL TRANSFORMATIONS OF WOODY FIBRE, STARCH, GUM AND SUGAR.

Woody fibre, starch, sugar and gum make up the great bulk of the vegetation of the globe; they are nearly identical in composition, but endowed with widely different properties. This identity of composition renders their mutual transformation even in the hands of the chemist, a comparatively easy matter, but in the processes of vegetation they are constantly going on, and appear to be as necessary to secure the maturity of a plant, as heat, air and light.

If wood be reduced to fine saw-dust, and heated a number of times in an oven, it will become hard and crisp, and may be ground in a mill. The powder or meal so obtained is a light yellow, and has a taste and smell not unlike wheat flour; it ferments when made into dough with yeast, and when baked yields a nutritious bread. In this process the woody fibre, or at least a portion of it, has lost its insolubility, and acquired the properties of starch.

By digesting fine saw-dust, or fragments of old linen (woody fibre,) in sulphuric acid, the fibre will gradually be converted into starch, gum or grape sugar; the particular substance produced depending upon the relative quantities of the fibre and acid used, and the time during which they are in contact.

When flour or potato starch is introduced into an oven and gradually heated to three hundred degrees, it slowly changes, acquires a yellow or brownish tint, and becomes soluble in cold water, because *the starch has been changed into gum.* This gum is now largely manufactured, and used by calico printers as a substitute for gum arabic.

If starch, sulphuric acid and water be taken in certain proportions, the acid and water mixed, heated to the boiling point, and the starch after mixing with a little water, poured into the dilute acid, the starch is first converted into *soluble starch*, or *dextrine*, as it is called, and by longer boiling into grape sugar. After the transformation is complete, the acid may be removed from the solution by the addition of chalk, which throws down the insoluble sulphate of lime. After settling, the clear solution of sugar may be poured off, and the sugar obtained from it by evaporation. This sugar is manufactured largely for the adulteration of cane sugar, and for conversion into spirits.

Sulphuric acid will by similar processes transform gum into grape sugar, and cane into grape sugar.

In vegetation we have like transformations continually taking place, but not always in the above order. Thus the sugar cane, Indian corn, and many other plants contain a large amount of sugar in their juices, just as they are going to flower; but after flowering, the sugar decreases, and we find it replaced by woody fibre, starch, &c. In biennial roots, such as the beet or carrot, there is stored up a certain amount of sugar, with a little starch, both of which rapidly disappear when vegetation is resumed in the spring, in the formation of the leaves, stem and seed. Trees too have stored up during winter supplies of sugar, starch, or gum, products of the preceding year's growth, which are in early spring very rapidly consumed and converted into the woody and cellular fibre of the young leaves.

GLUTEN, VEGETABLE FIBRINE, VEGETABLE ALBUMEN, AND LEGUMIN.

Thus far, we have spoken of such substances only as contain carbon, oxygen, and hydrogen, but there are certain vegetable products which contain nitrogen in addition to the three above mentioned, and which, although small in quantity, are of very great importance.

When wheat flour is made into dough, and the dough washed with water to remove the starch, there remains in the sieve after the washing away of the starch, a soft, adherent, tenacious mass, which has little color, taste, or smell. This is *gluten* of wheat. Other kinds of flour yield it when treated in the same way, but in less quantity. It is this substance which makes the dough from wheat flour so adhesive, and by its tenacity gives the dough the property of rising after yeast has been added.

When gluten is digested in alcohol, an

insoluble white substance is left, which, from its close resemblance to the fibre of lean beef or mutton, has been called vegetable *fibrin*.

From the clear liquid which remains above the starch after standing, a substance may be obtained, which, from its resemblance in composition and properties to white of egg, is called vegetable *albumen*.

Peas and beans contain a substance called *legumin*, which, from its close resemblance to the curd of cheese, is called vegetable *casein*.

Gluten, vegetable fibrine, vegetable albumen, and legumin, appear to be as closely related as sugar, starch, gum, and woody fibre are to each other. They consist of the four elements, carbon, oxygen, hydrogen and nitrogen, united together in the same proportions, and are capable, to a certain extent, of mutual transformations. When exposed to air and moisture, they undergo decomposition; they ferment, emit an offensive odor, and, among other products, produce *ammonia*, from the union of the nitrogen with a portion of the hydrogen of the fermenting body.

When barley which is newly malted and crushed is digested in water for a short time, it dissolves out a substance called *diastase*. This substance does not exist in the grain before malting, therefore *it is formed in the process*. No diastase can be found in wheat, rye, or potatoes, but if they are made to germinate, or sprout, and afterwards treated with water, diastase will be formed, showing that *it is produced during germination*. It is found to contain nitrogen, and must be formed from the gluten of the grain.

Diastase, like sulphuric acid, has the power of converting starch into dextrine, (soluble starch) and afterwards into grape sugar. It is to this property that the value of malt is due. When barley or other grain is malted, the gluten is the first substance to undergo change, forming diastase; the diastase coming in contact with the starch in the grain, renders a portion of it soluble by conversion into dextrine and grape sugar, and when the malt is made into meal and digested in hot water for the manufacture of beer, the whole of the starch is transformed to sugar, which is afterwards fermented. In making whiskey too, a certain portion of malt meal is added to a large quantity of corn or rye meal, and boiling water added; the diastase in the malt effects the conversion of all the starch of the meal into sugar, after which yeast is added, and in fermentation the sugar is transformed to alcohol.

In germination, it is the same as in the making of malt; the gluten under the influence of warmth and moisture, commences change, and forms diastase; this acting upon the starch converts it gradually into sugar, which being soluble is readily carried with the diastase to all parts of the embryo, supplying it with every thing necessary for the formation of cells, woody fibres &c. until its organs are sufficiently matured to permit it to derive its food from other sources.

The other vegetable products are all found to be composed of two or more of the four elementary bodies mentioned above. These substances, namely, oxygen, hydrogen, carbon and nitrogen, are called the *organic elements of plants;* so called because they are the elements concerned in building up, as it were, all organized structures, that is those structures which cannot be produced without the aid of the *vital* or *living* principle.

In the combustion of organic bodies, the organic elements form gaseous compounds, and escape into the atmosphere; it is found, however, that the entire body is not consumed, that there is always left behind a small residue, constituting what is known as the *ash*. The ash of a plant seldom exceeds five per cent. of its whole mass; it is composed of a variety of substances, which are called the *inorganic* constituents of plants—of these we shall speak in our next number; for the present, we will confine ourselves to a consideration of the sources from which the organic elements of plants are derived.

SOURCES OF THE CARBON OF PLANTS.

A statement of a few well known facts will show that the air is the principal source of the carbon of plants.

1. Seeds sown in a soil perfectly destitute of substances containing carbon, will, if well watered, germinate and produce plants which contain several times more carbon than the original seed.

2. Some plants grow and increase in size when suspended in the atmosphere and without being in contact with the soil.

3. Every farmer of any observation knows that the soil of wood land becomes richer every year in carbonaceous matter, from the decay of the annual crop of leaves, and that while this is going on the trees are continuing to increase in size. The same is true in lands that are in grass. The longer the grass stands upon the land the richer does it become in vegetable matter, and when broken up, lands that before were almost destitute of organic matter, often present a rich black mould.

The use of clover, buckwheat, peas, &c. for ploughing in, results from the property these plants possess of drawing much of their carbon from the atmosphere. If they derived their carbon from the soil alone, a crop of either of these plants ploughed under, would only return matter that had originally been contained in the soil, hence the organic matter in it could not increase; but we all know that every green crop ploughed under gives a positive increase to the organic matter of the soil, and that by persisting in ploughing them in, land that is almost destitute of organic matter may be improved in that particular to any desired degree.

4. The formation of peat bogs and swamp muck furnishes perhaps the most striking proof of the atmospheric origin of most of the carbon of plants. A tree falls across a small

stream, and produces a marshy spot, plants spring up, die and fall down; on these, new races spring up; year after year this continues, vegetable matter increases, and in time we have a bed of peat. Plants spring up from year to year in swamps, they grow, die, fall down and are succeeded by others; the vegetable matter increases rapidly, and soon the mud becomes black from the accumulation of carbonaceous matter resulting from decaying vegetation.

All these facts show that plants derive carbon from the air, and that they may be made to grow without deriving any supply from the soil. It does not follow from this, however, that the air is the only source of the carbon of plants. There are a number of facts which tend to show, that while the atmosphere is the principal source, the soil also supplies a portion.

Thus, while plants can be made to grow in a soil perfectly destitute of organic matter, they are not generally perfected in such a soil.

If the crop be carried off a field, the soil will be found in most cases to contain less organic matter than before it began to grow; and if the cropping is continued, without the addition of manures, the organic matter will gradually disappear. The mere ploughing the land without cropping, would by continually exposing the soil to the action of the air, gradually lessen the amount of organic matter in it; but two years' constant stirring the land will not rob it of as much vegetable matter, as one crop of wheat.

All soils are found to be more fertile for containing a certain amount of organic matter; but it does not necessarily follow from this, that the increased fertility is due to the organic matter supplying carbon to plants. For, as we shall see when we come to speak of soils, the presence of organic matter is of great importance to a soil, independently of any carbon it may supply.

Let us now see what compounds of carbon there are in the air, and in the soil, which are sufficiently abundant to supply growing vegetation with the necessary quantities of this element. We have seen that in the air there is but one, and that is carbonic acid; we must, therefore, look to this to supply all the carbonic acid derived from the atmosphere. Carbonic acid it will be remembered is absorbed in small quantity by water, hence the rain in descending will carry down more or less in solution, and by the absorption of water by the roots, a certain amount of the gas will go into circulation of plants. But the amount taken up in this way, must be very small as compared with the quantity required; therefore, we must look to some other means by which it can be supplied to vegetation. It will be remembered that leaves, and particularly their under surfaces, are covered with stomata, or breathing pores. Now, the leaves, through these pores, absorb carbonic acid with great avidity, select it, as it were, from the other gases of the atmosphere, carry it into the interior of the leaf where it is decomposed, the carbon appropriated to the wants of the plant, and an equal volume of pure oxygen returned to the atmosphere. This may be proved very readily by placing a growing branch full of leaves in an inverted glass vessel full of water which is known to contain carbonic acid in solution, and exposing it to sunlight. Very soon little bubbles of gas make their appearance upon the surface of the leaf, they enlarge, run together, and finally collect in the top of the vessel. If, now, after bubbles cease to rise, the gas collected is examined, it will be found to be pure oxygen; and if an examination of the water be made, it will be found to be destitute of carbonic acid.

The per centage of carbonic acid in the atmosphere appears to be too small to supply all the vegetation of the globe with carbon, but a simple calculation will show that there is at all times more of this gas in the air than would be produced by the combustion of all the vegetation now on the earth. But if we look at growing vegetation as one of the agents by which nature keeps up her balance, there can be no difficulty in admitting that the air is abundantly supplied at all times with carbonic acid. In all cases where the decomposition of organic matter takes place, whether by natural decay, combustion, or otherwise, oxygen is consumed from the air, and an equal volume of carbonic acid given off; hence, in the *destruction* of organic matter, we have a constant source of supply of this gas, which, in time, would accumulate to such a degree as to unfit the earth as the abode of animals, but for the fact that growing vegetation by absorbing it, keeps a check upon its increase.

The absorption of carbonic acid takes place during the light of day only; the rapidity with which it takes place depends upon the number of pores, and the extent of surface of the leaves; those plants which grow with great rapidity, either have a great number of leaves, or their leaves are very large. The rapid vegetation which takes place in the short summers of high northern latitudes, results from the days being so much longer, by which the uninterrupted absorption of carbonic acid goes on so many more hours, than in places near the equator.

Plants are said by many experimenters to give off carbonic acid at night and absorb oxygen, while others deny it; one thing is very certain, the carbonic acid given off at night is very small as compared with that absorbed during daylight.

The carbon derived from the soil by plants is also taken into the circulation as carbonic acid, at least the greater part of it; the soil admitting a free access of air, the organic matter undergoes gradual decay, by which there is a constant evolution of carbonic acid; this gas coming in contact with the water in the soil, is absorbed, and by that taken into the roots. In the decay of organic matter in

the soil, there are other soluble compounds of carbon found in small quantity, more or less of which are taken into plants through their roots, but the quantity of carbon received in this way is necessarily small.

SOURCE OF THE OXYGEN AND HYDROGEN OF PLANTS.

There is little difficulty in determining the origin of the oxygen and hydrogen of plants. Water we know, from its solvent powers, is the medium by which food is taken to all parts of the plant, and in that way it is of very great importance to vegetation. But it plays another part of equal importance; it supplies plants with all the oxygen and hydrogen they require. Water is composed of one atom of oxygen and one atom of hydrogen; and woody fibre, starch, sugar and gum, the substances which make up the greater part of the vegetable, consist of carbon and the elements of a certain number of atoms of water. The carbon required is supplied by carbonic acid, and there being a supply of moisture always present, all that is required for the formation of all these substances is, for a new arrangement of the elements of water to take place, and a union of them with the carbon derived from the decomposed carbonic acid. There are some cases in which the changes are more complicated, such as where substances are produced which contain more hydrogen than oxygen, or the reverse case when the oxygen predominates over the hydrogen; but even in these cases, the same principle which enables the plant to decompose carbonic acid, appropriate the carbon, and give off the oxygen, will more readily enable it to decompose water, appropriate either element and give off the other, and for the reason that the elements of water separate from each other so much more readily than those of carbonic acid, affording hydrogen here, oxygen there, to the necessities of the plant.

SOURCES OF THE NITROGEN OF PLANTS.

The existence of a large amount of nitrogen in the atmosphere would naturally lead to the inference that the leaves of plants absorb this gas directly from the air as they do carbonic acid, but this is found not to be the case. Leaves have a very marked power of selection, and it is found that while they absorb carbonic acid with great avidity, very little if any nitrogen finds its way to the plant through them. Neither do they absorb free nitrogen by their roots to any extent, for it is found that substances enter the roots of plants only in a liquid state, or in solution in water, and the solvent power of water on nitrogen is too small to admit of the assumption that any appreciable amount of the gas can enter the plant in this way.

Since free nitrogen does not enter plants by their leaves or roots, it follows that some one or more of its compounds must; of these compounds there are two which appear to be the chief sources of supply—*ammonia* and *nitric acid*. Ammonia is absorbed in large quantity by water, and almost all of its compounds are very soluble, hence there is no difficulty in seeing how abundant supplies of it in solution may be taken up by the roots of plants, provided it exists in sufficient quantity in the soil.

Ammonia and its carbonate, both very volatile, are given off from decaying vegetable matter containing nitrogen, from decaying animal matter, and from fermenting manure. Decaying vegetation gives off little comparatively, while it is evolved in large quantity from decaying animal matter and from fermenting manure, and it is to these two sources that the farmer must always look, to keep up the necessary supplies in his soil.

Nitric acid is found to supply plants with nitrogen as readily as ammonia. It, as well as all of its compounds, is very soluble, and enters the roots of plants with as much ease as ammonia, so, that, in so far as the nutrition of plants is concerned, it appears to serve the purpose just as well as ammonia itself. Ammonia, however, is more generally diffused than nitric acid, and is a constant product of the decay of all organic bodies containing nitrogen, while nitric acid is found only under very favorable circumstances. Therefore, we must look to ammonia as the prime source of the nitrogen of plants.

We thus see that carbonic acid, water and ammonia are the sources of the organic food of plants, and these are the very same substances that are formed in the decay of organic matter; hence, we see, that by a beautiful provision of nature, the destruction of one race of organic beings becomes the source of life to succeeding races.

For the Southern Planter.

THE HESSIAN FLY—THE BLACK FLY AND THE JOINT WORM.

Mr. Editor,—The detail of a few facts, and a brief dissertation upon the above destructive foes to growing wheat, may not be uninteresting to you, or your readers, at this time. In the northern part of Culpeper county, (the location is given to show the gradual progress of the joint worm northward, and to indicate its present position,) the crops have been affected, more or less, by all three, or shall I say, by both of these insects, since the month of March.

The Hessian fly is so old and familiar an acquaintance, that it is not deemed necessary to say much about it; but in its relation to, and contrast with the others, the following points in its history may be appropriately introduced. The fly is described as being about one-tenth of an inch long, black in the head and thorax, and tawny in the hind-body, which

is covered with fine grayish hairs. Its wings are blackish, tinged with yellow, and are fringed with short hairs; they expand one-quarter of an inch, or more. This fly has been seen distinctly depositing its eggs, like minute reddish specks, along the upper surface of the leaves of young wheat. These eggs have been watched until reddish worms have been hatched from them, in from four to fifteen days, which crawl down the leaves and conceal themselves between the sheath and the stalk—remaining there, head downwards, until they go through all their transformations. They neither eat the stalk, nor penetrate within it, but seem to live upon the sap, by suction, and continue to grow for five or six weeks, when they attain their full size of three-twentieths of an inch in length. The skin hardening now and changing color from a white to a chesnut brown, the insects are said to be in the flaxseed state. This fly has its insect enemy, or Ichneumon, which preys upon it while in the condition of a worm. And here, it might be well to define what an Ichneumon or parasite is: It is an insect which lives by preying upon and consuming another insect, in its immature state. There are many of them, and they serve to repress the immoderate increase of our noxious enemies. "They all *oviposit* in living insects, chiefly while in the larva state, sometimes while pupæ, and at others, while in the *egg* state. The eggs thus deposited, soon hatch into grubs, which immediately attack their victim, and in the end insure its destruction."

The preceding, compiled by way of premise to the following, and much more very interesting matter, may be found in Johnson's Farmers Encyclopædia and Kirby & Spence's Entomology.

The wheat in this neighborhood came out of the late severe winter looking badly, in the month of February. By the middle of March it had improved not a little, and promised fairly; but towards April it was observed to have an unfavorable appearance in small portions of some fields, in the half of others, and in the whole of others—at first it seemed to cease growing and to remain stationary, then to retrograde, and finally to disappear, as it were, from the surface of the ground; at the same time were seen tufts or bunches of strong, healthy wheat in the midst of the puny growth around, such as the land might be expected to bear when unaffected; and such as really grew in unaffected portions of the same field. These bunches, accompanied by the gradual disappearance of the wheat around, was the most prominent and striking characteristic of the disease. They were observed by every body, and attributed by every body, almost invariably, to rich spots, caused by droppings of cattle, or cowpens, or more extended manurings—for of such diversity was their sizes and shapes. Another remarkable characteristic was this: the lateral stalks, the tillering, seemed to hug the ground, instead of rising straight up, as in health, and presented a grass-like appearance. One of my neighbors, an extensive wheat-grower, at once pronounced the presence of the "joint worm," from having read an account of it; and I coincided with him, having also read the same account—though, unfortunately, I am unable to lay my hand upon it now. When the diseased condition became more apparent, others assigned different causes for it—some the severity of the winter—some, the want of due preparation of the ground—and some the Hessian fly—and all were incredulous as to the joint worm, supposing it could only be recognized by the bent joints. When the wheat was heading, upon examination—I was about to say close examination, but no great nicety was required,—a small worm, about a quarter of an inch long, white, or slightly marked with greenish lines, could be found in the cavity of the wheat stalk, just above the roots—not in the first joint from the head, but in one of the first from the root; and a lacerated wound in the leaf or leaves, covering the stalk, could also be seen. That this was altogether a different insect from the Hessian fly, was obvious, from the fact that the latter was present at the same time, its worm being found in a quiescent state between the leaf and the stalk, while the former was a stirring, active worm, found within the stalk itself. Its principal ravages seemed to extend throughout April and early May; and it showed itself in different fields at different times, as well as remembered. And let it be remarked, that it seemed to favor or attach itself to the later wheats first, and then to the tenderer of the earlier sorts, viz: it manifested itself first and chiefly in Zimmerman and Poland, then in Early Purple Straw, and lastly in Mediteranean, *if it attacked that at all.* Let it be remarked also, that when people were told they had the joint worm in their wheat, they replied, not so—that only showed itself when it was heading; but that theirs had the "go-back," a term, Mr. Editor, familiar to us for several years.

About the middle of May, while trimming a young orchard, (before breakfast,) I noticed vast multitudes of a peculiar and unusual fly upon the small trees, especially those nearest the wheat field—when the trees were shaken, they fell to the ground, as if indisposed to fly, and from their numbers and color, they reminded me of swarms (in miniature,) of young bees. Not expecting at that time to write about them, they were passed by with less observation than they merited. They may be described, however, familiarly and from memory, as being black flies, about a half an inch long, with whitish, mouldy-looking wings extending to the ends of their bodies—stout in the thorax and head, but slimmer in the abdomen. Imagine a fly between a black ant and a young honey bee in size, and you may recognize these when seen. In a day or two they all disappeared for parts unknown, whether by death or migration, was not observed.

The attention of another neighbor, also a very extensive wheat-grower, was called to the last one noticed. He had never seen such a fly. Now, that this is the fly of the worm that had done such great injury to the wheat, is very probable, from the circumstance that it commenced improving a short time before its appearance, say when the worm had ceased to feed upon it, and continued to improve afterwards. And that it is, is almost, if not absolutely certain, from the fact, that upon hearing the worm had been found changed to a fly, I examined for it, and found a fly, head upwards, not quite so matured, but identical in appearance, just cutting its way through the stalk and leaf. It was so plain, I searched no farther. Let it be remarked here, that from the material improvement in the wheat about this time, most persons remained incredulous as to the presence of the dreaded enemy, and even the gentleman who first announced it, began to waver. But the conclusive evidence was near at hand that the joint worm was in our midst. The wheat began to grow in height and to head, and now was seen, in the latter part of May, head after head bent down, from the disease in the joint. A few joints are bent as much as to forty-five degrees, others, and by far the larger portion, are bent to an angle of ninety degrees, and some few to about one hundred and twenty degrees.

We might pause here, Mr. Editor, to inquire whether this is another stage of the same disease, or a separate and independent malady, caused by a different and distinct fly—that of the joint worm proper. I was of the former opinion until informed by you that you had repeatedly hatched the insects from the galls on the straw, and that accurately measured they were only thirteen-hundredths of an inch long. This would seem to be conclusive; and, yet, it may not be. There is supposed to be a close resemblance between the joint worm and a worm that was very destructive to barley in Massachusetts in 1829 and '30. Dr. Harris hatched out many insects from the maggots in the swellings in the straw, and much to his surprise, they proved to be minute, four-winged Ichneumon flies. He had hoped to have obtained the true culprits, the cause of the disease, but these little insects, while in the larva state, had destroyed them all. Of these insects, the female was thirteen-hundredths of an inch long—the male rather smaller; and may not your fly, of the same length, be a similar Ichneumon, the parasitical fly of the true joint worm? Be this as it may, you must allow me to consider the black fly and the joint worm either as the same disease, or as concomitants, and then I can proceed with the facts—*and* the theory.

This stage of the disease, this symptom, is by most persons dreaded more than all that's gone before; but, to me, it appears a mere incident, a minor injury, as compared to the preceding great destruction. However, this opinion may be exaggerated, from the fact that the Hessian fly was committing its ravages in my fields in conjunction with the worm; and, yet, the highest estimate I have heard of these bent joints is as one to twelve, though in my wheat there is not probably one in fifty; and it was supposed by good judges, that the crop must be cut short at least one-half. Now, what is one-twelfth even, and that too of the remaining standing crop, to one-half, or more, of the original growth of wheat? But these two losses do not include all the probable loss; for the wheat, attacked by the worm and the Hessian fly, was in so green a state at so late a period, that it was seriously threatened by another serious evil—the rust—and this green state was directly attributable to the worm, from its having cut off and destroyed the main, original stalk, and probably the early tillers, and left only tillers, or the later tillers, as the case may be, to come to maturity, except the bunches and patches before spoken of. The season has been so unusually favorable, that very little rust has been seen; but the late green wheat was dried up, while standing, without becoming completely ripe. Another source of most serious loss, is the condition of the leaves and stalks, not yet spoken of, to be mentioned presently.

As to these bent or broken joints, where are they situated, how are they produced, and what is the cause of them? On June 1st, I gathered twenty-nine stalks indiscriminately; and as they were bent in different situations, they were counted out separately. There were nineteen bent at the first joint below the head, seven at the second, and three at the third; one was afterwards seen bent at two joints. The situation is nearly accidental, but the above may be a fair proportion. The bend is produced by a diseased state of the sheath, and not of the stalk. The sheath is thickened, hardened, corrugated and inclined to one side, and the tender young stalk has to bend also, and accommodate itself to its envelope. In almost every instance, the stalk is healthy and uninjured, except that by the pressure of the unyielding sheath it is compressed and hardened, and even has its cavity more or less obliterated. This can be observed by any one, by cutting through the stalk and joint, longitudinally; but, in fact, the stalk was also observed to be bent and injured in a few instances below the diseased joint. This may have been accidental, from the binding of the lower leaf, as you see sometimes in young corn, or the stalk may have been injured by the matured fly when depositing its eggs. If it does deposit them, as will be suggested under the quere, what is the cause of the bent or broken joints? It has been already stated that the worm was found in the stalk, near the root, and that when changed to a fly, it was seen cutting its way out, and numerous, very numerous stalks were afterwards observed lying about the fields, in the midst of the wheat, cut off near the root. Now the bent stalks give no indication of cutting or injury near the

roots; they are simply bent at the first, second or third joint below the head. The seat of the disease is thus changed, not only from the bottom to the top of the stalk, but to different stalks. At the bent joints, in the thickened substance of the sheath, there are a number of nodes or nodules, some three, four or five, of a whitish hue and of different sizes. Upon examining these carefully, either a beautiful nidus for an egg is found; or when more mature, the worm itself, of various sizes, from a very minute object to its full development, (as a worm,) about a quarter of an inch in length; and while yet young it is similar in appearance, and active and stirring as was the original worm near the root. It may be added, that small worms, similar to the others, were at times found between the leaf and the stalk, at the joint, which had probably escaped from the sheath without being observed. Does not all this indicate that after the fly matures, comes out of the stalk and becomes impregnated, it seeks a proper nidus for its eggs and young, and that it alights upon a suitable stalk of wheat, either *near* or *remote*, and inserts its eggs into the tender succulent sheath near a joint, first, second or third, according to its stage of growth, or the condition of the leaf. As confirmatory of this, it may be mentioned that, although nothing of the ravages or the existence of the primary worm was observed in the Mediteranean wheat this spring, yet bent joints were found in that wheat on one side of a farm road, where Poland wheat (which was affected with it) grew upon the other side; and the same was searched for in other places, but not found. It is the enlargement of the sheaths, and the formation of an unnatural secretion, (on *the side* where the eggs are deposited,) to accommodate these eggs and the young worms that causes the angle at the joints.

The account of this disease and its devastating effects is not yet finished. There is a dwarfish, stunted condition of portions of the wheat, not noticed until after the 1st of June. It showed itself to a far greater extent in my crop than did the bend at the joints, but not by any means to so great a degree as in other crops farther south. From them, I would infer that this is the most destructive part of the malady; quite as destructive, perhaps, as the first stage of it in the spring. This is identical in cause and character with the bent joints, viz: the deposit of the eggs *along* the sheath of the last leaf, or the one next to the last. These are deposited *around* the leaf for the distance of two or three inches above the joint, and being so arranged, the leaf continues straight from the equal enlargement upon all sides. Where the joint is bent the stalk in many or most instances goes on to heading, if not to maturing the grain, because of a slighter pressure or stricture upon it; but in the other case, from the pressure all around and for such a distance, the stalk is almost obliterated, and no head is formed at all. However, in this the difference of the injury does not consist, but in the great, the immense disproportion of the stalks affected in either way. By the latter, large patches, or even whole fields may be rendered barren, and in this, Mr. Editor, I presume, consists the great devastation usually attributed to the joint worm, and the great terror caused by it; and when it proceeds to this extent, it is truly not only a destruction of the farmer's crop, but a blasting of the hope that may have revived in his breast, after the first great injury in the spring. Upon examining one of these indurated leaves, you will find whitish, longitudinal swellings for two or three inches, and in attempting to bend it, it will break short off, like a pipe-stem, exhibiting at the fracture cavities broken across, containing each a worm, similar in all respects to those at the joints. Searching farther, the head is found immature and blasted, or at times consumed in part by a worm not unlike the others; and the stalk is found at times small and thread-like; again, wilted; and yet, again, eaten by a worm similar to the others.

Now, in regard to all this secondary crop of worms, *i. e.* in the galls, at the joints and along the leaves, but not those seen consuming the head and the stalk, and between the sheath it was noticed that at first and until half grown, they continued slim and active, like those of the first crop; but after that, they became swollen and maggoty-like, sluggish and torpid. Can it be that in the former state they are the larvæ of the black fly, as yet well and healthy, and that in the latter they are the same, timid and decaying under the influence of the Ichneumon worm developing within them, and consuming their vitals? If such be the case, these parasitical worms may well be regarded as friends of mankind; and when they are sufficiently numerous to consume and destroy most or all of the larvæ of the black fly, it will account for the non-appearance sometimes of the joint worm in places where it had been the year before.

The future progress, development and habitation of these worms, must be left to others. The writer of this will have no opportunity again, for two years or more, to make observations. Should the facts that have been detailed assist entomologists in their inquiries, and enable farmers to recognize their enemy in its different stages, it will be sufficient for him. And here, perhaps, this communication, from its length, should come to a close; and yet, it may be interesting to inquire as to how long this foe has been among us unrecognized, until attention was directed to it by the intelligent farmers of Albemarle; and also, what precautions may be taken against it.

That it has existed in this region for several, if not for many years, appears more than probable, from the following facts. The same appearances, as seen this year, in April, were observed by my predecessor in a field of Zimmerman wheat two years ago on this farm.

The same bent joints, also, were noticed by him in wheat on the same field, four years ago—and, if I am not mistaken, I heard complaints of broken-jointed wheat between 1822 and 1830, in this county, when the ravages of the fly were also much complained of. Of this, though, I am not certain. I feel convinced though that at that time, although quite a youth, I noticed wheat very similar in appearance to that described as dwarfish, stunted wheat above. Again this spring, people unable to account for its condition, said the wheat had the "go-back"—an expression familiar to us for a long time, as mentioned before. It was remarked to me too, this year, in June, that my wheat had the black fly, in a tone to indicate it was no new disease. It would seem, then, that this is an old enemy, appearing at intervals among us. What remedy have we for it, if any? It appeared to attack, this spring, such wheat as was tender at a late, and even, perhaps, at an early period, i. e. the latter part of March, whether caused by the long and severe winter, or the late character of the wheat itself. If such be the fact generally, the remedy would seem to be plain, viz: to adopt either a very early wheat, or one that, although late, may have a hard, coarse stalk, calculated to resist the puncture or admission of the insect, or its egg; for you will remember a laceration of the leaf was observed over the stalk containing the worm. Can it be that the worms existing at this time, and unaffected by their parasite, will become dormant and continue so during the winter, either in the straw or the earth, and on being matured into flies by the first warm weather in spring, will deposit their eggs in the young wheat, if suitable, or fail to do so, if beyond their reach, and thus allow it to escape? In respect to early sowing we are met by the dangers of the Hessian fly in the fall; and by late sowing we incur the dangers of the joint worm and Hessian fly in the spring, and the rust in the summer—being thus placed between Scylla and Charybdis. A proper medium as to kind of wheat and time of sowing must be obtained, if possible; and the Mediterranean seems to admit of earliest sowing, and to be safest from both the fly and the worm, though generally of moderate yield. Does any one know of a more prolific early wheat, i. e. of early growth in spring, whether white or red, and of a hardy, coarse style of stalk?

The relative injury upon poor, rich, and guanoed land was noticed. The former was unable to rally under even a moderate attack, whereas the two latter, by tillering and a rapid second growth, made a fair, and in some places a considerable yield. Another precaution then would be to sow only on land in good heart, or guanoed, and in good condition, so as not only to give out tillers, when the main stalk is cut off, which poor land cannot do, to any extent, but also to push them rapidly forward between the time of the worm ceasing to feed upon it, and the time the mature fly is ready to deposit her eggs upon it.

The writer of this will probably sow one-half of his crop this fall in Mediterranean, as soon after the first of September as possible, and the other half in Poland wheat, giving to each as large a dose of guano as he may consider he is able.

The facts in this communication may be relied upon as far as a tolerably accurate memory will serve, but the theory, though plausible may be erroneous, and yet it will serve to link the facts together until the truth is discovered.

ANON.

July, 1852.

PAYMENTS TO THE SOUTHERN PLANTER,

From July 23d, to August 23d, 1852.

Hillery Moseley, to June, 1853,	$1 00
Jesse Jarratt, to July, 1853,	1 00
Maj. D. H. Robertson, to Jan. 1853,	1 00
Prof. C. B. Stuart, to July, 1853,	1 00
Freeman Eppes, to January, 1854,	3 00
Dr. M. M. Harrison, to July, 1853,	1 00
J. G. Powell, to July, 1853,	1 00
A. H. Reams, to July, 1853,	1 00
Thomas P. Bland, to July, 1853,	1 00
Dr. H. E. Shore, to July, 1853,	1 00
Thomas Branch, to July, 1853,	1 00
Dr. W. J. Dupuy, to July, 1853,	1 00
Rev. T. W. Sydnor, to January, 1853,	1 00
H. M. Dickinson, to July, 1853,	1 00
John T. Bland, to January, 1854,	1 00
Peter A. Wilkins, to July, 1853,	1 00
J. R. Motley, to July, 1853,	1 00
John B. Odom, to January, 1853,	6 00
John Goode, to January, 1853,	1 00
John A, Herring, to July, 1853,	1 00
S. S. Griffin, to January, 1853,	1 00
J. F. Lilly, to July, 1853,	1 00
A. W. Gray, to July, 1853,	1 00
Henry Thompson, to June, 1853,	1 00
David T. Lanier, to January, 1853,	1 00
James L. Ege, to May, 1853,	1 00
Allen A. Burwell, to July, 1853,	0 77
Cassius Foley, to May, 1853,	1 00
H. E. Weston, to January, 1854,	4 00
Joseph Harris, to July, 1853,	1 00
Dr. K. Nelson, to July, 1853,	1 00
A. M'Daniel, to January, 1854,	3 00
W. F. Hobbs, to July, 1853,	1 00
Dr. T. Jones, to January, 1853,	1 00
Anderson Hughes, to January, 1853,	5 00
William Hughes, to July, 1853,	1 00
J. H. Burgess, to September, 1853,	2 00
D. R. Fielder, to July, 1853,	1 00
Philip Thomas, to July, 1853,	1 00
Albert Kennedy, to July, 1853,	1 00
Dr. Joel Watkins, to January, 1853,	5 00
Dr. E. L. Nelson, to August, 1853,	1 00
Richard Reins, to January, 1854,	5 00
H. Carpenter, to January, 1853,	1 00
T. N. Gee, to January, 1853,	2 00
Col. R. R. Brown, to July, 1853,	1 00

Wm. Catterton, to January, 1853,	$1 00
George M. Terrell, to September, 1852,	1 00
M. L. Anderson, to September, 1853,	1 00
W. H. Jones, to July, 1853,	1 00
Alfred Carpenter, to January, 1853,	1 00
B. T. Brown, to July, 1853,	1 00
G. W. Coleman, to July, 1853,	1 00
N. Burnley, to July, 1853,	1 00
Dr. James B. Rogers, to January, 1850,	2 00
J. H. Lewis, to January, 1852,	1 00
Lewis M'Gehee, to July, 1853,	1 00
J. A. Earley, to September, 1853,	1 00
Dr. G. B. Stevens, to July, 1853,	1 00
P. H. Goodloe, to July, 1852,	1 00
Colin Catterton, to July, 1853,	1 00
R. H. Carr, to July, 1853,	1 00
N. W. Elson, to July, 1853,	1 00
Isaac Medley, to January, 1853,	2 00
W. B. Stanard, to July, 1853,	1 00
D. Horace Hardaway, to July, 1852,	3 00
Edward Johnston, to January, 1855,	5 00
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N. G. Norfleet, Jr. to July, 1853,	1 00
R. G. Haden, to September, 1853,	1 00
James R. Fleet, to January, 1854,	2 00
John Haw, to January, 1853,	1 00
William H. Sizer, to July, 1853,	1 00
B. Bridgforth, to January, 1853,	1 00
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R. B. Haxall, to September, 1852,	1 00
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GREAT SALE OF SUPERIOR THOROUGH BRED SHORT-HORNED CATTLE.—The subscriber will offer for sale, his entire herd of choice short horns, comprising 50 head, young and old at public Auction, on Wednesday, the 13th of October, 1852, at 1 o'clock, P. M. at his Farm 2½ miles from the City of Troy; reserving to himself one bid on 5 Cows and Heifers, and 1 Bull, say 6 head in all, and these to be pointed out previous to the commencement of the sale; this bid will be made public when the six animals are brought to the stand for sale. Should any gentleman advance on the single bid made by the proprietor, the highest bidder will be entitled to the animal. It is proper to say, the severe drought in this vicinity reducing the hay crop one half, has decided the proprietor to make this sale at the time named, instead of next June, which he had purposed to do.

The well established reputation of this herd in this Union, and in Canada, and the splendid herd it has measurably sprung from, viz: the famed herd of that eminent English breeder, the late Thomas Bates, Esq. renders it hardly necessary to comment upon its superior merits. It may not, however, be unappropriate to remark, that the establishment of this herd was commenced in 1838, and that the most careful attention has since been paid to its breeding, and that it now contains mostly all the reserved stock of two former public sales. Since 1840 the proprietor has imported from the late Mr. Bates, and his friends and late tenants, the Messrs. Bell's, 7 herd of Short-Horns. And besides these, he has now on the passage across the Atlantic, shipped 21st of June, on board the Packet Ship Kossuth, Capt. Jas. B. Bell, a superior yearling roan Bull, having many crosses of the famed Duchess Bulls of Mr. Bates. Including this latter animal and the two beautiful red roan 3 year old Heifers, which came out from England last September, "Yarm Lass" and "Yorkshire Countess" and the beautiful Heifer Calf of the latter animal, got in England by the Duchess Bull 5th Duke of York, there will be 14 head of this imported stock, and its immediate descendants. There has been sold from this herd but three Heifers from these importations, and these Heifers were sold at $300 each. All the young Bulls bred from these Cows, except those now offered for sale, have been also sold at private sale, at $300 each, most of them while quite young.

Besides these 14 head of high bred animals, the noble premium Cow Esterville 3d, bred by E. P. Prentice, Esq. of Albany, and her equally fine 2 year old, red and white Heifer bred by me, got by the Bates Bull Meteor, and 3 of the famed milking Willey tribe, the same tribe of Cows as the Heifer Ruby, sold by me to Mr. S. P. Chapman of Madison Co. and which Cow was awarded the first premium by the New York State Agricultural Society, for producing the largest quantity of butter in 10 days in June, and 10 days in August, on grass pasture only, being a fraction over 40 lbs. in those 20 days. There are other valuable tribes in the herd, as the printed Catalogue will show.

The Catalogue will be ready for distribution about the 1st of August, and will exhibit richness of pedigrees rarely to be met with, showing the descent of the most of the animals from the best animals on record in the English Herd Book. Having received an invitation from H. Strafford last winter, to forward a list of the pedigrees of my herd to be inserted in the forthcoming volumes of the English Herd Book, of which Mr. Strafford is now the Editor, several pedigrees were sent to him of the animals here offered for sale, and will appear in said book.

A credit of 9 months will be given on all sums up to $300, and 9 and 18 months on all sums over $300, for approved paper, with interest, payable at some Bank in this State.

GEORGE VAIL.
Troy, N. Y. Sept. 1852—2t

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Ed. DeBow's Review, Merchant's Exchange.
New Orleans, July, 1852—6t

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Tillage and Pasturage are the two breasts of the State.—*Sully.*

FRANK: G. RUFFIN, EDITOR. P. D. BERNARD, PROPRIETOR.

VOL. XII. RICHMOND, OCTOBER, 1852. No. 10.

For the Southern Planter.

COMMUNICATION TO THE VIRGINIA STATE AGRICULTURAL SOCIETY.

Received by the Executive Committee, and ordered to be published, July 16, 1852.

NEW VIEWS OF THE THEORY AND LAWS OF ROTATION OF CROPS, AND THEIR PRACTICAL APPLICATION.

BY EDMUND RUFFIN.

"——As the difference between good and bad farmers depends more on this point than any other, so the difference between well and ill cultivated countries is almost wholly resolvable into the effects derived from the rotation of crops"—*Arthur Young's Agricultural Travels in France.*

The celebrated agricultural writer and extensive and usually judicious observer, Arthur Young, uttered the words above quoted, in connexion with more extended remarks of like import, when about to describe and denounce the generally very defective courses of crops in French agriculture. In all his voluminous works, this author has advanced no general proposition more true, or more important.—There may be, indeed, in different cases, great agricultural profits obtained by industry and economy, by skill in operations, or by the use of particular facilities for increasing the production of the land. But each and all of these benefits will be but transient, and, sooner or later, will lead to diminished production, if not to great impoverishment of the soil, unless accompanied and aided by some regard to a more or less beneficial system of rotation of crops.

Yet this important and indeed essential aid to agricultural success, and progressive improvement, is very little understood; and, in this country especially, the true laws of rotation have been as little subjected to investigation, as the laws of supposed or admitted theories of rotation have been obeyed in practice. There are indeed, every where, changes of crops; and, in most cases, these changes occur in some regular order, in each neighborhood, or similar agricultural region. But these changes of crops are directed merely by conformity to old usage, or by considerations of present convenience and speedy profits, and not by any correct views of the principles of rotation, if even with the slightest reference to them—Such seems to be the case in the old settled northern states, where the labors of agriculture are the most assiduously performed—where nothing is lost in economy of means, or by neglect of frugality—and where great attention is paid to manuring the soil and maintaining its fertility. In Virginia, there is more of fixed routine in the sundry rotations in use in different localities—but not usually more directed by reason than the different courses of crops of the northern states. Here, in the old settlements, we had long ago reached, and are now beginning to recover from, the lowest state of exhausted and impoverished soil; and dire necessity has compelled all thinking farmers to attempt some improvement of rotation, as well as of fertility. In the more southern states, the progress of injury to the land and diminution of its fertility, has scarcely yet been checked; and the rotation of crops, as well as most other of the best means of preserving or increasing the fertility and value of the land, are still almost totally disregarded.*

* The censure above passed upon the ignorance of northern farmers, of the principles of rotation, is more than fully, though indirectly, sustained by the latest elaborate work on agriculture published in that region. The "American Muck Book" by Dr. D. J. Browne (who claims to be both a practical and scientific agriculturist,) has first appeared in 1852, and may be presumed to present, in its instructions, such opinions as are deemed either true, or at least respectable, by the practical and reading agriculturists of the state of New York, where the book was written and published. In treating this particular subject, this author says, (page 418,)—"*As no particular systems of rotation have as yet been established in the United States*, those in the following tables are offered for the consideration of the cultivator, until better ones can be found." This sentence must be admitted as evidence of the absence of any "systems of rotation" in practice, so far as his observations had extended—as well as that his observation and information had fallen short of any of the "systems of rotation" which certainly are established among the best-informed farmers of Virginia. But this author offers still stronger proof of his (and also my) assertion as to the farmers of the northern states, in the various schemes of rotation which he suggests, and which are presented in several tables. There are various courses offered, embracing all ordinary

It has long been known, and is now almost universally admitted, that few cultivated crops, if indeed any one, can be continued with advantage on the same land for years in succession. If continued to be cultivated thus, without change, the production would more and more fall below the amount first obtained, and with much more of decrease than could be ascribed to any reduction of the fertility of the soil. Hence, even in advance of all theory or reasoning on the subject, it was generally understood by the best informed agriculturists that it was not only profitable, but essential, that different kinds of crops should be cultivated in immediate succession. These changes of cultivation make what is understood as the *rotation of crops.* There have been some cases of land which appeared to bear many repetitions of the same crop without such diminution; and hence some writers have argued against the necessity for changes of crops in general. These few exceptions to general rule will not need to be considered here; though some reasons for their existence will hereafter be brought forward incidentally to the main subject.

A reason for the necessity of changing growths, which formerly passed currently and for a long time, and satisfactory to all, was this: That each crop required for its sustenance, and consumed during its growth, some specific manuring principle or substance in the soil; and that when this was much lessened by use, the same crop could not be again produced as plentifully, though other growths might: and that, during the cessation of the first growth, though others still were produced well, the exhausted specific nutriment for the first growth would be reproduced by some unknown operation of Nature.

Now if this supposed substance was a particular mineral, its consumption and decrease might indeed produce such effects, though not in one or a few years only; and when this exhaustion occurred, it would be necessary for the cultivator to replace the deficient mineral, as it could not be reproduced by Nature. Thus, lime is essential to the growth of clover, and sulphate of lime is especially beneficial. Phosphate of lime is essential to the production of wheat. But if these were so lessened in soil as to impoverish the growths of the crops they severally nourish, all the rest that could be given to the land, or change of its growth, could not restore any of these deficient mineral manures. Therefore the wasted manuring substances to which this theory of rotation applies must be organic or putrescent, and not mineral. But every manure of the latter kind is nutritive and sustaining to all cultivated crops, and not in very different degrees of intensity. And there is no one such substance (except it is some vegetable acid,) which is a manure for one class of vegetables alone, and not nutritious to any other. Hence, though such putrescent manures may be reproduced in soil by natural means, they also are inapplicable to this theory of rotation—

crops of that region, and all for terms of ten years—and suited to each of three great divisions of texture of soil. It is enough to say that these various crops, in their succession, obey no rule, or principle of any known theory of rotation, and that as schemes of rotation they are not only incorrect, but absurd and ridiculous. It would seem that the author deemed *change* as equivalent to *rotation*—but for the opposing fact that he sometimes has not even a change of tilled crops in two consecutive years. Further—he often offers, for one year, the choice of two or three different crops, as equivalents for the rotation, so different in character, that if either one were suitable in the succession, the others would necessarily be unsuitable, no matter under what theory or practical scheme of rotation. Thus he offers as alternative crops, for the same place in the course, "wheat or Indian corn" repeatedly; in other places, in like manner, "flax, clover, or carrots"—"rye or carrots"—"flax or carrots"—"oats or peas"—"buckwheat, potatoes or carrots," &c. &c. I will quote two of the entire rotations prescribed, with their choices of equivalent crops. The first is one of the rotations "for the richest kind of light soil" and the second for "an ordinary sandy soil," pp. 419, 420.

1st year.	*2d year.*	*3d year.*	*4th year.*	*5th year.*	*6th year.*	*7th year.*	*8th year.*	*9th year*	*10th year.*
Flax, Clover, or Carrots.	Wheat or Indian Corn.	Rye and Turnips.	Rye, Barley and Turnips.	Potatoes.	Wheat or Indian Corn.	Rye and Turnips.	Flax.	Clover.	Wheat or Indian Corn.
Indian Corn.	Rye.	Clover.	Rye and Turnips.	Rye and Turnips.	Oats or Buckwheat	Potatoes.	Rye and Turnips.	Indian Corn.	Clover.

These, with all the other schemes proposed, seem as little guided by reason or rule under any system, as if the inventor had decided by drawing lots which should be the preferred crops for each year of the particular r.tation stated.

These theoretical schemes are beneath contempt—and are unworthy of the slightest notice, except to show how little must be known by northern agriculturists of either the theory or practice of rotation of crops, when such stuff as this is put forth as instructions on the subject by the latest northern author of a work so elaborate in appearance, and of such ambitious pretensions as to science and authority, produced in that region which claims an agricultural rank, both scientific and practical, immeasurably higher than that of Virginia, or any other southern state.

which indeed has no support from science, and is not advocated by any scientific agriculturist of the present time.

A later theory of rotation originated with scientific men, and was supposed, for a time, to be proved by accurate experiments and observation. This is the "excretory theory." It was observed by Macaire, and confirmed by De Candolle, and others, that the roots of living plants, immersed in, and drawing their sustenance from water, excreted and deposited some substance, which, from its being so rejected, was inferred to be unnecessary or hurtful to these plants, and which therefore could not be again taken up and consumed by the same plants. Hence, it was inferred, that the continued succession of one kind of plants, on the same space, would fill the soil with its excreted matter, which would be useless or hurtful to the same plants, though useful as manure and food for any other kinds—and hence was inferred the necessity for changes of crops.

This theory, for a time, owing to the high authority of its first supporters, was received with a high degree of favor, which has not continued to be afforded. As the plants were placed in water, for the purpose of observing the excreting process, their unnatural situation must have induced diseased action, and the excretion might have been a result of disease. Again—the excreted matter, if in soil, must have been subject to the ordinary process of decomposition, like other vegetable and putrescent products—and such decomposition would have totally altered its qualities, and rendered it innoxious, if not nutritive like other decomposed vegetable manure, and as much so to the parent plant as to any others.

But, (as I have supposed, and maintained in former publications,*) there are sufficient other reasons for the beneficial effects of changes of crops, without allowing any credit to either of the older theories. Every different kind of plant is subject to be preyed upon by particular tribes of insects. Many of these insects, which depredate upon our cultivated crops, are known to every observer. But many other kinds, owing to their minute size, perhaps invisible to natural sight, may be unknown, and unsuspected, though present in millions, and producing great damage, if not destruction. Probably there are but few diseases of crops which are not entirely the result of the depredations of insects, and generally of those scarcely if at all visible.

Thus, each particular cultivated crop, whether of grain, pulse, roots or grass, serves as the food and the shelter of some or perhaps of many particular tribes of insects. These insects must increase in numbers, so long as their peculiar food is furnished in abundance, and the other conditions necessary to their healthy existence also are offered, as either in suitable temperature, shelter, &c. &c. But their ravages do not usually and regularly so increase through the life and growth of the crop, for several obvious reasons. The condition of the plants, as changed during growth, may, and generally must, become unsuitable as food. The changes of the insects, (as from the maggot to the winged state,) will require other food, or will entirely stop their feeding. Changes of temperature, or of weather, may operate suddenly to destroy myriads, and so relieve the crop from their ravages. Hence, a very wide range of changes of such operation must be expected in the same year, and still more in different successive years. Still, it cannot be doubted, that the longer a particular crop is continued to be grown on the same ground, and the same necessary conditions of the soil and its surface remains the more, in the general, must be increased in numbers, and in injurious effects, the particular tribes of insects which are best sustained by this crop, and whose propagation is most favored by the particular conditions of the ground required for that crop. This would present sufficient reason for the diminution of products of the same crop and similar condition of the land, being continued year after year on the same space—and of the far better product of any other different crop succeeding, which would be unfit for the food, and its culture unfavorable to the propagation, of the particular tribes of insects sustained by the preceding crop.

Further—the succession of different crops of the same great tribe or family, is also injurious, and for like reasons, though less so than the repetition of the same crop. Wheat, oats, rye, barley, are all nearly allied, and of like general habits and wants, and their culture presents like conditions of the land. Hence we may well suppose that all these crops are subject to some or perhaps to many of the same kinds of depredating insects. Numerous other plants, with these, belong to the same great family of plants, termed by botanists *graminiæ*, or the "true grasses." This family includes Indian corn, and all the other cultivated grain-bearing plants, (cereals,) and most of our common grasses, as herds-grass, timothy, crab-grass, fox-tail, blue-grass, green-sward, broom-grass, cheat, darnell, &c.; but not the clovers, which belong to the leguminous or pod-bearing tribe. Now as there are some characteristics common to all the different plants of this numerous tribe, it is probable that some depredating insects are also common to all. Hence a succession of different and even very unlike plants of this one great family would still expose the succeeding crop to depredators bred and nourished by the preceding crop. Thus, wheat, following Indian corn, (notwithstanding the cleansing tillage of the corn,) and even as following the crab-grass and fox-tail, which are ordinary late weeds among corn, must suffer in this manner—

* Farmers' Register, Vol. VII. pp. 561, 606 and 609, and Vol. VIII. p. 7, and Report of the Agricultural Survey of South Carolina, 1843.

though in less degree than if following more closely allied grain crops.

Again: The conditions attending the growth or manner of culture of particular crops also serve to encourage the growth and increase of weeds. Thus, during the whole life of wheat and other cereals sown broad-cast, or not tilled, the weeds are undisturbed, and all that have seeds in the earth, or are sown with the seed of the designed crop, are in the most favorable condition to grow, mature, and cast seeds for another crop of weeds, with perhaps hundred-fold increase. This disadvantage is necessarily encountered with every sowing of wheat and other autumn sown cereals, especially as these give full time for all winter weeds to grow; and, in a less degree, the like evil attends every other broad cast or untilled grain crop. Hence the necessity for alternating these untilled and weed-encouraging crops, with others which are tilled, and by their tillage serve to destroy every annual weed that springs, before it can form seeds. The greatest difficulty in all schemes of rotation for Britain has been the want of some tilled crop of large and general culture, which would enable the farmers, by the tillage labors, once in the rotation to eradicate the hurtful weeds. Their turnip and bean tillage serves this purpose for limited spaces only, which do not approach the wheat fields in extent. For the want of such a cleansing crop as we have in Indian corn, British farmers are compelled to resort to the laborious and expensive operation of naked summer fallow. This consists in giving a whole year of the field to its cleansing merely—in repeated ploughings, harrowings, and hand-pickings of root-weeds. Thus, at enormous expense of labor and rent of the idle field, it is effectually cleansed, and well prepared for the following crop of wheat. We have no need of this kind of summer-fallow in this country. Yet it has been advocated by closet agricultural writers, and in some cases practised, in our totally different circumstances, in blind obedience to English authority. What we improperly call "summer-fallow," is a totally different kind of operation. It is the turning under a cover of clover, or other vegetable growth, in August or September to serve as manure; and, usually, one ploughing only is given or required for the seed-bed, and all preparatory tillage, before harrowing in the seed of the following crop of wheat.

Upon the grounds here assumed and stated, I place the necessity for the rotation of crops. The changes are required mainly to check the continued increase of destructive insects, or animalcules; and in a less, though still an important measure, to check the continued seeding and increase of the weeds most injurious to crops. If keeping this theory in view, it will not be difficult to establish principles and rules for practice in conformity with the theory; and to subject to a sure test the value of every scheme of rotation that has been practised, or may be devised. I will first submit the general and particular laws of rotation, which are strictly deduced from the theory here proposed and maintained.

The great and general law is that *the succession of every two consecutive crops in a rotation should be such as will make a thorough change of the kind and even of the family of the vegetable growth; and also, as much as may be, of the mechanical condition of the soil, and especially of its surface.* This thorough change of growth, and of condition of the land, in the occurrence of every new crop, would be the most effectual means for as often destroying, or greatly lessening, the then existing depredating insects, and preventing the growth or increase of injurious weeds. But the theoretical perfection aimed at cannot often be attained, in practice—and ought to yield, in minor points, to considerations of convenience and profit. The greatest benefits to be expected from the rigid adherence at all times to the general law just stated would sometimes be obtained at too great cost. Therefore, with proper regard to general principles, but also with due regard to other important circumstances, and especially to the farmer's profits, I proceed to offer other more particular laws or rules, which should direct the choice and the manner of rotations.

1. Every scheme of rotation should be such as *to offer the greatest regular, average, and general profit to the farmer.* Such profit necessarily includes the progressive improvement and fertilization of the soil, where needed—or the maintenance of sufficient fertility where that already exists—and also the avoiding of unnecessary (and unprofitable) expenses, in labors of tillage, or otherwise. And such profits will rarely be found in any exhausting course of cropping, no matter how greatly productive for the few first years. It is also necessary that the crops to be raised shall be such as are not unsuitable to the locality, soil, climate, consumption, and markets. Hence, no particular rotation of crops will be suitable under very different conditions in any of these respects.

2. Each particular crop, or growth, in the rotation, should be beneficial in performing one or more of the following functions: 1st. By *cleansing* the land of insects or of weeds: 2d. By *altering the texture and condition* of the soil, and thereby *preparing* it the better for the growth of the next succeeding crop: 3d. By *manuring* and so enriching the land: 4th. Or *furnishing profit* in products, for consumption or sale, fully remunerating all the costs of production, and making a due portion of the farmer's general profits, or increase of both annual income and capital. By these four different operations, of *cleansing, altering condition* of soil *and preparing* for the succeeding growth, *manuring*, or *producing profit*, will be designated the results of the particular crops in the subsequent estimates of their values as parts of a rotation.

3. The place of each crop in a rotation should be so fixed, that its growth and culture

shall the better prepare the field for the next succeeding crop. If this is not done, a very important design of rotation will be omitted. Still a greater error will be committed when the growth of any one crop the more unfits the land to produce the next succeeding crop.

4. Crops which are the most different in kind, in their tillage and in the condition they place the soil, should alternate with each other. Thus, one tillage crop, (as corn, cotton, potatoes, turnips,) should not come in immediate succession with another, but with some broad-cast or untilled crop, or with grass. A tap-rooted growth, or one receiving deep tillage, should come next to a year of either shallow tillage, or none, or of shallow growing fibrous-rooted plants. Thus, the peculiar operation of every crop on the texture and condition of the soil may serve to benefit the next succeeding crop, which may be defective in that respect. Of course these different requisites would sometimes come in conflict, and cannot all be rigidly obeyed. But they should be kept in view, and attended to as nearly as may be most advantageous.

5. As the great benefit to be sought in every scheme of rotation is the effecting sudden and thorough changes, both of crop, or cover, and of condition of the soil, and for the purpose of destroying the insects which the continuance or frequent occurrence of one crop or one condition would aid to increase—it follows that the more extended the rotation, in time, and in the number of different crops and conditions, the better for the object of starving or destroying the peculiar depredators on any one crop. Hence, if equally advantageous in other respects, rotations embracing many years, and many and very different crops, will better conform to the requisites of the theory of rotation, than any of fewer years and crops.

6. Another requisite of every rotation is that the land shall be always occupied, or as nearly as possible, with some growth, or be under some operation serving for future profit, manuring, cleansing, or preparing the field for future production. Every long intermission is so much loss of the action, productive power, or recuperative energy and action of the soil.

Any scheme of rotation which will conform generally to these rules will be good and profitable, though it may be far from the best possible. Any one in which these rules are mostly or generally violated, must necessarily be bad, and unprofitable.

In the first settlement and earliest cultivation of new and fertile land, it may be justifiable to take even three or four of the same tilled crops in succession. The new settler may have no choice either of land or of crop. And it may well be that the *cleansing* effect of such continued tillage, so much needed for new land, and the great value of the products, may compensate for any possible objections. But no amount of annual production can pay for such continued cropping, exhausting and without change of growth, being extended beyond the few first years succeeding the forest or natural state of the land; and still less for such culture being made a regular system so long as remunerating products can be so obtained. Yet such, or nearly as bad and exhausting, was the general practice for a long time in Virginia—as it still is on most of the cotton lands of the new southern states.

In every case of the successful long continuation of one crop having been adduced to oppose the necessity of a change of growth, and the doctrine of rotation, the crop in question was some one requiring frequent and clean tillage, as tobacco, cotton, or corn. Now the tillage itself is a great and frequent change, serving at every recurrence to interrupt and check the growth of vegetable pests, and also of all insects which are sheltered or hatched in the earth. The long continuance of any broad-cast crop would be stopped by the increase of weeds, if not by animal depredators. But even if the same crop could be produced repeatedly, and without any diminution except from the reduced fertility of the soil, it would be still a loss of the preparation for some other crop, which, in some way or other, almost every one crop makes for some other different growth.

Passing without further notice this worst and most destructive of all systems of cultivation—either of one crop continued without any change, or at most the continual alteration of but two exhausting crops—I will subject to the test of the above rules some of the regular rotations now in use in lower Virginia, and each of which is approved and pursued by different farmers.

I. *The First and usual Three-Shift Rotation.*

The old three-shift rotation was the first that was substituted in the eastern half of Virginia for almost incessant cultivation. For a long time it was deemed an improving course—and still is adhered to, in some form, by most persons, who cannot be counted among either the best or the worst cultivators. In its earliest and worst form, this rotation was as follows:

1st year, corn—

2d year, wheat, (wherever the land could yield as much as 3 or 4 bushels to the acre,) or otherwise oats—

3d year, closely grazed by lean cattle.

The succession of wheat after corn, (which is almost universal in all existing rotations of this region,) is objectionable, inasmuch as both plants are of the same family (*gramineæ*). Therefore, I presume, it is that the product in wheat almost always falls much short of the productive power of the land, as shown after other preparations for wheat. On poor land, the previous tillage of corn serves indeed to *prepare* the land for the wheat, and renders the seeding processes very easy. But this sole advantage is lost on rich land, or in a moist season. For then the growth of crab-grass on light land, and of fox-tail on stiff, following immediately after the close of the corn-tillage—

together with the incumbrance of corn-stalks to be removed and their stubble to be ploughed under—make the seeding in wheat of corn-land more laborious than if without the crop of corn preceding.

The third year gives but a meagre cover of natural grass or weeds, which is nearly destroyed by the trampling, more than the grazing, of the lean cattle, with which the pasture is very generally over-stocked—and therefore the land affords in its growth but little manuring for the next succeeding crop of corn; and indeed is rather more exhausted than recruited by this (so-called) year of rest.

This rotation is faulty, and offends against the rules laid down, in every respect—except so far as giving more or less pecuniary returns, and these continually decreasing, in the grain products.

II. *More recent Variations of the Three-Shift Rotation.*

The rotation just described has latterly been in many cases varied, and rendered less exhausting, by the grazing of cattle being prohibited in the time of rest. In fewer cases, and on rich land, (or after applying calcareous manure, if poor,) clover has been sown on the wheat. In both these cases, the third year's growth according to its quantity and kind, is made more or less *manuring*—while the other objections still remain.

III. *Taylor's Four-Shift Rotation.*

Upon this last form Col. John Taylor founded his four-shift rotation, by adding another year of rest, and prohibiting all grazing. This was very lenient cropping, with two years and a half, out of the four, furnishing *manuring* growths. But by this long rest, the land became more and more infested with bad weeds, with bushes, and with insects. In addition, owing to the absence of trampling stock, and the quantity of rough though poor weeds to plough under, the soil became too open and loose to be suitable to either wheat or clover. Thus, the effect of the long interval of continued rest, though *manuring*, was the reverse of *preparing*, or improving the texture of the soil, for any succeeding crops in the rotation.

IV. *Four-Shift Rotation of Three Grain Crops.*

The four-shift rotation which was so admirably carried through by Messrs. Hill Carter, John A. Selden, and other of the best farmers on some of the best lands on the tide-waters of Virginia,* was as follows:

1st year, corn (or oats, instead, in particular cases)—
2d year, wheat—
3d year, clover—ploughed under in August and September—
4th year, wheat.

* And described and advocated in sundry communications to different volumes of the Farmers' Register.

Here are three cereal crops in succession, and all exhausting, and with only one manuring crop (clover, ploughed under). Still, the good quality of the soils and sub-soils so cultivated, and the talent, skill and industry of the cultivators, with the great attention paid to manuring, made this rotation improving to fertility, as well as highly productive in annual sales. But the *manuring* operation of the clover growth, and the *preparing* operation of its being ploughed under, with the great annual returns *in profit* of the other three crops, are all the advantages of this rotation—which in other respects is entirely opposed to the theory and laws of rotation here maintained. It is actually exhausting, and of course still more unprofitable, on all ordinary or middling natural soils. And even on the very superior natural soils where this rotation was first introduced and long pursued, the best farmers who so long preferred and eulogised it, have since abandoned its use, and have adopted, in some one or other form, the more extended course next to be mentioned.

V. *Five-Shift Rotation.*

The five-field rotation is now generally in use with most of the good farmers of lower Virginia, who also cultivate good wheat and clover soils. It has several different forms, or variations—but all agree in having two of the fields in wheat (or partly in oats) and one in corn. The most ordinary and approved form is like the preceding four-shift rotation, with one more year of partial rest, or moderate grazing, introduced after the 4th year—thus:

1st year, corn—
2d year, wheat—
3d year, clover—
4th year, wheat—
5th year, volunteer growth of clover, mixed with natural grasses and weeds, partially but not closely grazed.

The only important defect of this rotation is the immediate succession of wheat after corn, which is always objectionable, and not less so in this than in any of the previously described rotations. Of late years, by a practice of my own neighborhood and elsewhere, and which is now rapidly extending, this objection is partly removed.

VI. *Five-Shift Rotation, with Secondary Crop of broad-cast Peas.*

This new and growing practice, and variation of the five-field rotation, is to sow peas broad-cast among the corn, in July, just ahead of the latest tillage, which serves to cover the seed. The peas, shaded by the corn, make but a slow and feeble growth at first; but when the corn is killed by the removal of the tops and blades—or, still better, if the stalks are cut off, and put up into shocks—the peas then grow rapidly as long as warm weather may last. Thus, though for too short a time for its full product and benefit, a broad-cast covering crop of peas is interposed between the corn

and wheat, without separating the two latter by any longer than the previous and usual interval of time. Those farmers who have tried this new feature and additional manuring crop for the five-shift rotation have found (as nearly or quite all believe) much benefit in the increase of the succeeding wheat crop. But this benefit, though easily and conveniently obtained, and without any alteration of the space or time required for the rotation previously, is not near so great as is to be obtained from giving another field and another year to the interposed manuring crop of peas, as will be hereafter described.

To more or less extent, in the course of my farming life, I had successively tried all the preceding plans of rotation, beginning with that of three-shifts from necessity, and proceeding, from preference for the time, to each of the other better plans in succession. Of all these, the last, or the five-shift rotation, with peas sown among corn, is now preferred by nearly all who have tried this as well as other plans; and this also best conforms to the principles of rotation as stated above.—While concurring in this now general preference for this form of the five-shift rotation, I have farther altered and extended this to a six-field rotation, which is deemed still more perfect.

Before proceeding to describe my present rotation, it may not be superfluous to premise that I do not recommend this particular plan for general adoption through an extensive region. The fitness of any rotation for a particular locality must be determined by the existing conditions and circumstances. The differences in markets, and therefore of the most profitible crops for sale—and of soil and of climate, which would so much alter the rates of production of different crops—would not permit any one rotation to be universally the best for a territory some hundreds of miles across. Within a few miles of distance, there are often presented as great objections to uniformity of rotation, because of differences of soil, form of surface, moisture, and degree of fertility. Even on the same farm, and the same field in some cases, it is difficult to make the same rotation serve for every part. My present plan is submitted merely as being deemed best for circumstances of not very different from those of my farm and its locality. And the conditions which I deem necessary for using this rotation with full benefit, are these: Soils suitable for both corn and wheat, (or perhaps oats instead of wheat)—accessible markets for these grain products—the access to and use of calcareous manure, or otherwise the culture of soil either naturally calcareous or neutral—climate not too far north for the good growth of southern peas, and not too far south for clover. In addition, the land must not be too poor to bear green crops of peas and clover of sufficient manuring value to well reimburse the labor and other expense of this mode of improvement. There would not be as much difference of labor as 1 to 2 between the ploughing and seed required for the poorest and for the richest land; yet the bulk and value of the green crops grown thereon, might differ as 1 to 10. But lest in making this exception, I should improperly discourage effort, it should be added that my poorest land—before not capable of yielding 6 bushels of corn or 3 of wheat—after being well marled,* would bear a good cover of pea vines; and the before most barren spots are all now included in this rotation.

All the conditions above required for this rotation, may be found in thousands of farms, from the north-eastern part of Maryland and Delaware, to the south-western part of North Carolina—and in the higher range of country, as far south as in Georgia, if not into Tennessee and Alabama.

Further—it is obvious to the slightest consideration that even where soil and climate would entirely suit a particular rotation, other conditions may make far more profitable another plan which would be altogether wrong and inadmissible on general principles. For example—on farms within a few miles of large towns, roots, hay, and other bulky forage will be more profitable than grain. Also, for such farms, rich town manures may be bought and applied to profit, and to great extent. The latter condition will permit and repair any desired extent of exhausting cropping, and will render green-manuring comparatively useless—and the former condition will forbid the raising grain for sale, and require the great extension of meadow and grass husbandry and their adjuncts.

It is very difficult to arrange in advance any plan of rotation, to which some unforeseen and yet strong objections will not apply, when putting the new parts into practical operation. This difficulty will be deemed the most formidable by those farmers who have the most studied, in practice, the subject of rotation. For more than thirty years, I had studied and practised on this subject, and had sought, with many trials, and hoped, with every change, to adopt the best plan for my circumstances. The more I had learned by experience, the more fearful I had become of meeting new difficulties. The arranging for and adopting a change of rotation is a very serious business; and if the new plan proves to be improper, and has to be abandoned, the farmer must be a heavy loser in several respects, but especially in regard to time. For some three or four years at least will be required to establish regularly a new rotation, and as many to undo it, if found to be erroneous. With these considerations, I took some years for deliberation, and for preliminary trials, before commencing my designed six-field rotation regularly in 1848, by

* The marl used, however, is the eocene of the Pamunkey river—containing a valuable proportion of gypsum, in addition to the much larger and principal manuring constituent, carbonate of lime.

sowing one entire field in peas, to be ploughed under for wheat. This was the main new feature designed to be introduced. Still I was doubtful as to the best of two plans for interposing the green manuring crop of peas between the corn and next succeeding wheat crop. Therefore I so arranged as to try both these different features at the same time, but in different spaces, without disordering the rotation generally, and so as to permit me at any future time, and easily, to abandon either mode, and wholly pursue the other. This was the cause of the variation of culture on a smaller part of the space, and also a part of the time of the whole rotation, as will appear below.

The plan of rotation last preferred will now be stated generally, and next, each successive year's operations described; and all the parts of the system suggested to be tested by the theory, principles and laws of rotation, as proposed in the foregoing pages.

VII. *The Six-Field Rotation, with Pea-Fallow.*

The value of the southern field pea, as a manuring crop, and as a preparation for wheat, had long ago occurred to different farmers, and sundry trials had been made, and mostly reported as successful, and encouraging. The adoption of this feature as part of a regular rotation had also been proposed, and in a few cases even commenced in practice by a few improving farmers. But, from whatever causes, the new practice rarely, if ever, was extended to an entire field, or to a second year. The sowing of one shift in peas, alone, and as part of the designed regular rotation, had been effected by my son for two years (1839 and 1840,) on the Coggins Point farm, in conformity with my views published in the Farmers' Register, and referred to in a preceding marginal note. But though the results were satisfactory, the scheme was necessarily abandoned, because the seed could not always be bought. On this account, the seeding of the whole designed crop, for the third year, was lost; and it was too hazardous to continue a rotation, of which the main operation and expected value rested upon so uncertain a resource. We could not (as was then erroneously supposed,) raise the seed from either the broad-cast sowing alone, or field-culture under corn, and the market supply, for sale, in Virginia, was very limited and uncertain. This was the most extensive and longest continued practice of pea-fallow for wheat then known, and until my recent and now regular operations. The expense of the preparation, both in seed and labor, had probably suspended the earlier trials of other farmers. But I had not ceased to approve the culture; and as soon as the land which I now occupy had been prepared for the good growth of peas, (by marling,) and some smaller trials had been made in several different years, I deemed it safe (in 1848) to go fully into a six-field rotation, with the wheat of one entire field, one-sixth part of the farm, sown upon a broad-cast cover of peas. The practice has since been continued, and with results even more favorable, in the general, than I had anticipated in advance.

1st year—Indian Corn.—Secondary crop, *peas*, planted in the intervals of the corn rows, last of May, to produce peas for seed, (or for consumption or sale,) or provender for live stock, in the vines and pods.

2d year—Peas sown broad-cast, from May to July, and the growth ploughed under in September (or later) for wheat-seeding.

3d year—Wheat on pea-fallow—clover sown in the spring.

4th year—Clover—ploughed under in August and September, to prepare for wheat.

5th year—Wheat on clover-fallow.

6th year—Pasture until in May or June—not grazed later.

It is not my intention to describe or direct modes of cultivation. But it will be necessary in the following remarks to state all such particular processes as are supposed to have any bearing upon the action of a crop, or its tillage, upon the rotation.

First Year—Corn, with secondary crop of Peas.

The tillage for this year is upon land grazed the preceding year until in May or June; and all the later growth left undisturbed until ploughed under. If good land, it will be well covered, and usually with tall annual weeds principally, with more or less admixtures of clover, and good natural grasses in spots. The ploughing is begun early in December, and finished before the end of winter—and done as deeply as the soil admits, if not too laborious for the team. Most of this ploughing on my farm is now done with four-mule ploughs, running 7 or 8 inches deep. The vegetable cover is mostly well and deeply covered. Ploughing thus early and deeply produces a great change of condition. The then dormant insects, or their eggs, sheltered by the weeds, on or near the surface of the earth, are mostly buried deeply. If others required and had occupied deeper places of deposite, they are brought up to or near the surface in subverting the soil. The new naked surface is exposed to frequent freezing. Nearly all the before living insects are killed, and also the plants, except the indestructible root-weeds, and almost nothing is left for food for either insects, or the burrowing field mice. But still many insects, then in the dormant state, or their eggs, escape, and furnish depredators for the corn in the spring. The vegetable cover, ploughed under, serves not only as manure, but acts mechanically to aid the longer continuance of the loose texture of the soil, produced by the deep ploughing, and the subsequent freezing; which loose condition of soil is especially suitable to the growth of corn. The repeated tillage processes given to the growing crop, by harrows, cultivators, ploughs, and hand-hoes, serve to prevent the seeding, if not to entirely kill, every annual or

biennial weed that grows there. The indestructible perennial root-weeds only escape destruction.

Though the object of growing this crop is its profit only, yet its preparation and tillage serve to perform also the functions of *altering the texture* of the soil, and *cleansing* it of weeds and insects—and of *preparing* deep and clean tilth of soil, for the next succeeding crop, peas, whether as a secondary crop in the same year, or a distinct culture of the following year.

The secondary crop of peas, planted in the rows and the intervals of the corn plants, are too late to diminish the product of the corn. The whole growth of corn is cut off and placed in shocks, as soon as mature enough. Mine is an early kind, and has completed its growth usually by the middle of August. The peas then begin to grow rapidly, and soon to mature their pods. These are gathered, or the whole vines may be removed for forage. This secondary crop then is for *production* only. It may be omitted where not wanted for that purpose—or when the extent of planting would be inconvenient.

The secondary crop of planted peas costs almost nothing, except the seed and the labor of planting. It is the general belief, where this practice of raising peas thus as a secondary crop, under and after corn, has long existed, that the corn is not thereby injured in its production. This opinion has been tested and confirmed to me, by one very carefully conducted experiment. The later growth of peas draws but little from the soil, until after the corn has ceased to grow. The subsequent growth of the peas, (as of all leguminous plants,) is supported very much more by the atmosphere than upon supplies of nutriment from the soil. But, of course, more or less of the fertility of the soil must be thus abstracted, if the whole growth, in pods, vines, roots of the pea crop, is removed. But the great value of the products, as furnishing peculiarly nutritious and grateful food for both man and beast, and rich material for manure, will more than compensate for the slight and usually imperceptible loss of fertility to the producing ground. If the pea vines are left on the ground, as usual, probably they return as much manure to the land as the gathered or consumed seeds abstracted. If all the growth should be so left, whether of planted or of broad-cast peas under corn, the effect of the growth must be to add to the richness of the soil.

Second Year—Pea Fallow.

The field remains unoccupied from the removal of the corn, or the following peas, and nearly naked, after frost has killed the late annual and volunteer grasses that succeeded. This is an important defect of this rotation. I have in one case avoided it by sowing rye (mixed with peas) with the last tillage of the corn. The crop grew well, and the rye stood high through a mild winter—was partially grazed in spring—and ploughed under before heading, in the regular preparation for sowing the next crop of peas. I would have continued this practice, but that rye could not be bought for seed, and I objected to raising the seed, lest it should become mixed with all the wheat of the farm. The introduction of the additional grazing and manuring crop, rye, promised well. But as I have not been able to repeat the experiment, I will treat of the course of crops without that addition. Even with all the care used to cover and kill the rye in the green state, enough seeds escaped and matured to infest the wheat crops since.

If any part of the field is clayey, or stiff, it will be safest to plough such part before the warm and drying weather of spring, for fear that it may not be in good order for ploughing later. But for this fear, the greatly preferable time, and for all light soil, is to plough in the latter part of May. At that time all the annual weeds, of which seeds had remained until then dormant in the soil, have not matured seeds, but are too far advanced in growth to form seeds again, if then ploughed under. Thus, the annual weeds which especially injure wheat, by the intermixed seeds—as cockle, cheat, darnel, and vetch (or partridge pea,) may all be then destroyed. Even that unconquerable root-weed, wild garlic, is cut off above ground, and at least can form no seeds that year. That ploughing is as shallow as will serve to do good work, and cover the living weeds. The corn stubble, though left very high, will not then much impede the ploughs. The peas are sown broad-cast late in May or early in June, (or, if prevented sooner, it may be even as late as in July,) with from 4 to 5 pecks of seed to the acre. Their growth, in favorable seasons, soon covers the otherwise clean surface, and subsequently makes a tall and densely shading cover. The great changes produced, first to a naked and dry, and loose and open ploughed surface, and next to a close shading leguminous green crop, must be entirely adverse to either weeds or insects which had been encouraged by the previous year's growth and tillage of corn, or any of the young weeds of the next spring's growth. And for the other kinds of insects that prey on the pea-crop, these, if then remaining, can scarcely escape starvation, when the green pea-cover is either ploughed under in September, or is entirely killed by the first severe frost. After the ploughing, and the continuance for more or less time of a clean surface again, wheat is sown in October. And this crop, so different from the leguminous one preceding it, can scarcely be the food of any insects that lived on the pea crop, and which may not have been destroyed with it. Thus, the broad-cast pea-crop is eminently *cleansing* of both weeds and insects, in its preparation, growth, and in its being ploughed under. It is also eminently *manuring* to the next succeeding crop and to the land. This superior manuring quality belongs to all the leguminous (or pod-bearing) plants.

It is not desired to give more than one very deep ploughing during the whole time of the rotation, and which one is done, in preference, preceding the corn crop. However, to cover the pea-vines may require deeper ploughing than would be otherwise desirable. But if much of the cover should remain on the ploughed surface—or if the ploughing cannot be completed before the vines are killed by frost, no perceptible injury to the succeeding growth of wheat is thereby produced.

Third Year—Wheat on Pea-Fallow.

This crop was sown on a seed-bed cleansed as perfectly as possible of every growth except that of peas—and that growth was entirely killed by the ploughing to prepare for wheat, or still earlier by frost. There could not be a cleaner seed-bed. And the succeeding crop of wheat must be entirely clean, if perfectly pure seed is sown—unless wild garlic roots were there, or seeds of partridge peas, and others as hardy, had remained buried and dormant, and unhurt, through the previous year. Again, with the wheat crop begins other great changes of condition. There is not only the great change in the entire growths of plants, as before stated, but of conditions, of the dense cover of legume in warm weather, to the thin sprinkling of cereal plants through winter, usually scarcely hiding the surface of the otherwise naked and often frozen earth. Any of the depredating insects of the pea crop that could possibly have outlived it, or their progeny, could hardly continue to live in this new and very different condition.

Though well assured, by ocular evidence, that the product of wheat on pea-fallow was not inferior to that on clover fallow—and greatly superior to wheat immediately succeeding corn, I have had no opportunity of comparing products by actual measurements of land and of its yield. But this I know, that my crops of wheat have been much increased since pea-fallow has been in use. In the year 1851, owing to the peculiarly favorable season, the product of wheat generally was greater than in any previous year—and my own crop was much greater than can be expected in ordinary years. The field of wheat on pea-fallow produced on 95 acres the unprecedented average (with me) of 27¼ bushels to the acre; while the wheat on clover fallow (120 acres) and that after corn (52 acres) together made an average of 21¼ bushels. The two latter fields were deemed of as good average fertility as the former; and the growth following corn was not much inferior (as appearing to the eye) to the wheat on the clover fallow.

Clover seed is sown in early spring on this wheat field. Except in thus *preparing* for the next succeeding crop of clover, this wheat crop is only valuable for its *product* in grain, and for its straw as stock food, and material for future *manuring*.

I very much feared, in advance of the trial, and my fear is not yet entirely removed, that clover would not stand as well after wheat on pea-fallow, as on wheat succeeding corn. If so, it is owing to the loose state of the soil, induced by ploughing under the heavy cover of pea-vines. The like defect always attends the clover after wheat on a good clover fallow. To counteract this defect, the land should be trampled by grazing stock after the wheat crop is removed. My sheep also have been permitted, for some years, to graze the wheat through winter, in dry weather, and without any certain evil being thereby produced. The grazing is doubtless more or less hurtful. But I believe that the trampling is a compensating benefit to the wheat, and a clear gain to the clover afterwards sown. I have found it very conducive to the protection and better standing of young clover, to pass over the ground, immediately after sowing, a heavy, pegged roller—the effect of which is very similar to the treading of sheep. The clover crop is very precarious in this region and climate—and the obtaining a stand of plants is especially uncertain and hazardous. But even if pea-fallow adds something to this hazard, I have not, since its adoption, had more failures in the stand of clover, than before.*

Fourth Year—Clover.

In the first beginning of clover culture, (as on my present farm in 1844,) and through the first course of crops, it is very difficult to obtain a good stand of plants from the seeding. If sown early, the seeds sprout in a warm spell of winter weather, and the tender sprouts are killed by subsequent severe frosts. If sown late, the seeds either fail then to germinate, or the young plants perish by the hot and dry weather following too soon. Owing to these different disasters, at least three out of four of my earlier sowings failed for much the greater part. But after obtaining even a very thin stand of clover, and the seeds have once ripened and been ploughed under, the volun-

* The passage above was written in 1851, and states correctly my experience and opinions on this subject to that time. Since, my clover crop of 1852, (sown on all the wheat, of pea-fallow, clover-fallow and also after corn, in the spring of 1851, and with much care, and aid of favorable weather,) so died out, that there was almost a total failure of the crop, and a very general extinction of plants, by the summer of 1852. But this great loss was found on all the richest land, where wheat had followed corn immediately, (though also on a secondary broadcast crop of peas,) as well as on the regular pea-fallow. It is manifest to me now that the clover plants thus failing to live is owing to the quantity of vegetable matter covered in the soil, and the consequent loose and "puffy" texture which is so peculiarly unfavorable to clover. I shall try as a remedy, still more trampling by grazing cattle, on the young clover, soon after removing the wheat; and still more trampling of the land under young wheat, during winter, by sheep, calves, and perhaps larger cattle in the dryest condition of the earth.

teer plants will be so numerous and will spring at so many different times, that they will generally supply the deficiencies of the seed sown; and from the two sources, either a good or a thin stand of young clover may be expected on all suitable soils, for this year of the rotation.

On the clover of this field (and the second year since the sowing of the clover,) all the winter-made manure of the stables, cattle and other stock pens, is applied as top-dressing. The reasons for this plan of manuring I have given at length, in a former essay on that subject, and they will not be here repeated. It is enough to say in this place, that, in this manner, the whole stock of prepared putrescent manure is in the shortest possible time, and with the least possible labor for the purpose, put to use, and made productive—that is, it is mostly converted to clover; and that the green manure is greatly increased in quantity and in nutritive value for succeeding crops, by the large additions supplied thereto by Nature, from the atmosphere. Without pretending to be accurate, I suppose that by such addition furnished from the atmosphere, the increase of the crop of clover-manure so produced, together with the portion of applied manure still in the land, is of double the value of the prepared manure only, used to produce this result.

The manure is applied only to such parts of the field as have some growth of clover to receive the benefit of the application. But if there is a choice, the poorest ground is preferred for the manuring. With a favorable season (as to rains) the manured clover will always be greatly improved in growth, and furnish a good manuring for the succeeding wheat crop.

Whenever the clover is not manured, and makes a good growth, it ought to be mowed, for green food and for hay. This mowing is proper, not only for the important value of the forage for farm consumption, but also to cleanse the land, by thus cutting off the stems of cheat, darnel and garlic, before their seeds ripen—and which plants, if left to seed, even in very small numbers, will furnish numerous rank bunches of these worst of weeds, to pollute with their seeds the next crop of wheat. Also, the mowing of the first growth of clover causes the second to spring quicker and to grow more; and the removal of the earlier growth greatly facilitates the subsequent ploughing. The second growth is left to be ploughed under as green manure. I should prefer to mow it for seed, but cannot, for want of labor at the proper time. The mowing of the first growth may be extended over the earlier applied rough manure, without being materally obstructed by any then remaining.

If the clover is too thin or too badly grown to be worth mowing, or if there is not spare labor to mow all the good, (as is generally my case,) it would be well to graze, and as quickly and closely as the farm stock can do, when the clover is beginning to blossom; and the stock then to be withdrawn entirely. This will be some approach to the better cleansing operation of mowing. It would not do to graze early and continually. For in that case the plants could not attain much size, and roots cannot grow more than in due proportion to the stems. But when the stems are cut off at nearly full growth, the roots being also full grown, will not only give all their bulk ultimately as manure to the land, but are able at once to throw out a vigorous second growth above ground. Before the forming of the seeds, clover has derived its support almost entirely from the atmosphere. If the entire growth above ground, of every year's continuance of the crop, were removed before the seeding, the roots alone would return more manure to the soil than had been taken up from the soil in all the growths removed.

Where clover fails to stand over considerable spaces, (as often occurs on sandy spots,) if desired, a good pea-fallow may be there obtained with certainty, by ploughing and sowing late in May. In such trials, made in different years, the succeeding growth of wheat has always been much better than on the immediately surrounding land covered sparsely with clover, and ploughed well at the proper and usual time.

The fallowing, or ploughing the clover under, (or weeds where no clover remains,) is begun as soon as possible after the end of July. It is unusual at that time for the earth to be moist enough for easy ploughing; and the difficulty of operation is increased by any considerable cover of clover or of weeds. For these reasons, although very deep ploughing is not desired, I have to do nearly or quite all of the summer fallowing with four-mule ploughs. If ploughing of 6 inches depth will serve to hide well the vegetable cover, I would not desire deeper at this time. But greater depth may be necessary for good work. The shallower ploughing, if well executed, will produce as good wheat. But the deeper is more effectual for burying the cover, and it so deeply buries the seeds of bad weeds (and unfortunately of clover also,) that plants do not spring from them the succeeding year—though they may come in great abundance, (as do wild garlic and red clover,) the second year after the deep fallow ploughing.

If this ploughing is well executed, in August or early in September, there is produced another great and sudden change of condition. The land, covered with dead and living clover, or weeds, and the soil filled with living roots, and with the numerous insects, of various tribes, that feed upon and breed among these growths—is suddenly changed to a bare, and soon a dry, and hard cloddy surface, open, as deep as cut by the plough, to the entrance of the air, and to the heat and even to the light of the sun. No living vegetable is left, and no shelter such as existed before. The eggs and *larvæ* of insects on the plants, and needing air, are buried at the bottom of the furrow-slice. Those before deposited for protection

in the earth, are brought to or near the surface; and in that unnatural position, must soon perish in the hot and dry air. Even if the land had been before very foul with green weeds, and with all annual pests, the thorough breaking and turning of the surface soil, in hot weather, must cleanse the land of nearly everything except root-weeds, the most tenacious of life, as wire-grass (*cynodon dactylon*) running brambles, &c. This thorough change of condition, and its cleansing effects, must be an important cause of the great superiority of wheat on such fallow compared to wheat succeeding corn immediately. For this superiority (in less degree) is found even where there was no clover, and only weeds.

This crop of clover, alone, and still more when with its accompaniments of top-dressing, mowing, and ploughing under, serves to *prepare* for the succeeding crop of wheat, in *manuring*, *cleansing*, and *improving tilth and texture*. Also, in the forage products, it serves for direct *profit*.

Fifth Year—Wheat on Clover Fallow.

With this crop, the land, which before had been more or less cleansed by every previous process, again is made foul. The weeds, which pollute wheat by the intermixture of their seeds, which had escaped the mowing, and had been ploughed under after seeding, will now produce abundantly, if left undisturbed. Each seed of cheat or of darnel, (especially,) buried, and not too deeply, by the ploughing in August, will grow to a rank bunch by October, too strongly rooted to be hurt by the harrowings, and which may produce 50 to 100 heads by the next harvest. Hence it often happens that a foul crop of wheat is made after sowing very clean seed. The surest mode of diminishing these weeds is to pull up the bunches, by hand, after the seeding in wheat. Their greater size renders them easily distinguishable from the young wheat for a long time.

Clover is not usually sown on wheat following clover, because of the great risk of losing the seeding. But even without sowing, in a favorable season, there is either a general or a sparse stand of clover, and of good growth, from the seeds before grown on the field and ploughed under.

This crop of wheat on clover fallow is solely for the immediate *profit* from the sale. It brings no other of the benefits of rotation, unless in furnishing in the offal very important materials for future manuring.

Sixth Year—Pasture, and Rest.

The rough and rubbish growth of weeds, the natural grass, or the clover, all of which make up the cover following the wheat, are grazed, and the land trampled to some extent, as soon as the wheat is removed. The next spring, the field is either the sole pasture of the farm, (if there is no separate and permanent pasture ground,) or is grazed closely at some time before or in June. Afterwards, no grazing is there permitted; and another and good growth of the different plants covers the land, and is ploughed under deeply in the next winter, to recommence the rotation with corn the following year.

This last year of the rotation serves for *profit* in furnishing pasturage, and afterwards, in the growth ploughed under, for *manuring* for the crop to succeed.

Live Stock in connexion with this Rotation.

Until the last year (1851) I had no pasture other than that furnished by one or other of the fields when in grass. The cattle, and sheep were kept in such numbers only as the land could not only well support, but which would even benefit the fields by their trampling. The number of grown sheep latterly has ranged between 30 and 40, and the grown cattle about as many. No more of the latter were desired than to consume as food and litter, and reduce to rough manure, the straw and other offal of the graip crops. Much of the straw was not needed as litter, and was carried out dry, and spread as top-dressing on the field designed for pasture the next spring. The sheep were not usually penned, and never since having a separately inclosed pasture; and never fed, except while snow covered the land.

Until the last year, my hogs have been almost wholly and continually kept confined in pens, and fed on corn, and the refuse of the wheat crop—which is a wretched system—though better than suffering hogs to range at large in the woods. The surplus clover, and the wasted wheat left in the fields, might have well supported my hogs for some months. But there being no division fences, and the hogs being uncontrollable by herding (as other stock are managed easily,) these resources were lost. Thus, my fields have furnished but little to hogs, except through the secured grain crops.

I have lately added to the arable farm, a permanent and separately inclosed pasture, on which it is designed to place the grazing stock at all times when their being on the arable fields is not deemed beneficial to the future crops. This will permit the increasing the number of cattle and sheep, the better supporting them, and also the more fully and effectually stocking, grazing and trampling the fields, for short times, when deemed beneficial to the land. This increase will permit *live stock* to be made a more important source of profit, by sales of lambs, calves, or older and fatted animals.

This statement of my stock-keeping and management is of no value for its merit, or as example—and is mentioned only because the omission would have left defective so much of the rotation of crops as is effected by the grazing, trampling, and manure-making operations of the farm.

VIII. *Variation of the Six-Field Rotatim.*

The fear which was entertained as to the success of clover after pea-fallow, made me hesitate whether to prefer the rotation described above, or another also of six fields, but without giving an entire year and field to broad-cast peas. On this account, I tried both plans, on different parts of my fields, from 1849 to 1852 inclusive. My preference changed at different times, when balancing the different advantages and disadvantages of each. But the experience of the last crop has convinced me of the superior benefits of the regular six-shift rotation, just described fully—and of the propriety of discontinuing the variation so far kept up on trial on a smaller part of each successive year's corn-field. This variation may be most plainly designated as being precisely the same as the five-shift rotation with secondary crop of peas before described, (VI,) with one more year added to the time of the clover (or third crop of the course,) and of course the postponement of the process of clover fallow for one year longer than in the five-shift rotation (of V. and VI.) Though I have now abandoned this variation, because at last preferring another plan, yet as the former possesses some peculiar advantages, and moreover, except in having one more year of clover, agrees precisely with the best form of the five-field rotation, (VI.,) I will still describe and remark upon this variation, as if in use.

First Year—Secondary Crop of Broad-Cast Peas.

On the field when in corn, (the first year of the rotation VII,) a small portion, embracing the lowest, stiffest and richest land, (which would be the least suited to pea-culture and the most to clover.) was not planted in peas, but was sown broad-cast, with the last ploughing of the corn, early in July. The corn (as before stated of all,) was cut off, and put in shocks, beginning after the middle of August. The pea-vines usually grow well, and make a good cover to the land before frost. But such growth under corn, is not near so heavy, or so well matured, as that of the other separate pea-fallow. At the time for wheat-seeding, the high corn stubble is cut off at the ground with chopping-hoes, and the land ploughed, turning in (very imperfectly) the cover of pea-vines, and the wheat is sowed and harrowed in.

Besides obtaining the *manuring* benefit of this crop of pea-vines, I counted on another in the breaking of the otherwise immediate succession of the two cereal crops, corn and wheat. For though they still occur at the same times as usual, the thick shading leguminous crop is interposed, and has full possession of the land for 6 to 8 weeks, between the death and removal of the corn and the springing of the wheat. The growth of peas also lessens the usual growths of crab-grass and fox-tail, which otherwise and generally cover corn-land of good quality, and all the land in a wet season, as soon as the tillage labors cease.

This mode of sowing peas has recently become much extended, in my neighborhood and elsewhere in Virginia. It is adopted in preference by my neighbors, because it requires no change of the other crops of any ordinary rotation—in all of which wheat follows corn, and between which crops peas may thus be interposed, with equal advantage. This has also been a much older practice in North Carolina. My own observations of the beneficial results to wheat are of little value. I have not yet been able to carry through any accurate experiment and measurement of products for this purpose—and have had no other entirely reliable subjects for comparison. But other farmers, from recent trials, declare that they have obtained decided benefits to their wheat crops from thus interposing the growth of peas as green manure. And the older and more extended practice and approval, and continued improvements thereby made, of many intelligent farmers in North Carolina, offer still older and fuller testimony in favor of this particular plan; which may be made a part of any rotation in which wheat is sown after corn of the same year.

Second Year—Wheat following Peas on Corn-Land.

On this, clover is sown, as usual—and the operation of the wheat crop is to *prepare* for clover, in addition to the main object of production and *profit.*

Third Year—Clover, of Second Year's Growth.

The clover of this year is treated (so far as convenient) precisely as described above for the like clover which, in the general plan, comes in the fourth year. The operation of this crop in the rotation, is also like that of the former.

Fourth Year—Clover, continued to the Third Year's Growth.

Until recently, and while it was still a new culture, it was generally supposed that clover, being a biennial plant, would not keep possession of the ground for the third year from the sowing. Hence the ploughing under for wheat, where designed, or otherwise to precede corn, was universally done in the latter part of the second year. But whether the mowing of the plants before the first seeding operates to extend the usual duration of their life—or whether new plants spring long after the sowing, (both of which I believe to occur,) I found that on my land the cover of clover of the second year is maintained well through the third year. The plants do not grow so tall as in the second year, but cover the land more thickly on the third than in the second year. This observation applies to cases where the first growth of the second year had been mowed.

This crop is ploughed under to prepare for wheat, in the same manner and time as the clover of the same year (and of only the se-

cond year's growth,) in the general rotation, as before stated. The same manuring and other operations belong to both. But the continuance of the clover for a year longer in the varied plan of rotation, must serve greatly to increase its manuring effect. The two parts of the field, before varied in culture, then are brought under the same treatment—and so continued to the end of the course of crops included in both plans of rotation.

Thus, according to my views, every crop and succession in this six-field course, in both forms, is conformable to the theory and laws of rotation previously asserted. There may be still better or more profitable courses than either; but both according to theory, and in practical results, for the short time of trial which has passed, I deem either of these modes preferable to any other and shorter rotation known in use in this or any other region.

It has been admitted, that this particular scheme of rotation must be confined within certain and not very extended limits of climate and productions. But so must every other form of rotation—and perhaps few can properly be more extended in use than this one. It is mere quackery to propose one kind of rotation, or one mode of fertilization, or of cropping, for general adoption. But however the particular crops and the terms of rotations may be required to vary, with changes of climate, markets, and other circumstances, the principles and laws of rotation are uniform and fixed; and if having due regard to these principles and laws, more suitable crops and changes may be introduced for different localities and circumstances. It is sufficiently difficult, with all the aids of reasoning and experience, for a farmer to determine upon and adopt a rotation the best suited for the circumstances of his own farm. It would be far more difficult to pronounce on the fitness of the plan the most approved by theory, for other and distant localities, even though the crops may be alike. I shall not, therefore, be so presumptuous as to advise what might even appear to me as the proper changes, where the principal crops must of necessity be different from mine. But it may not be useless to offer a few remarks on some of the important crops of other regions or rotations, and their peculiar fitness for performing certain of the requisite purposes of a good rotation.

Tobacco was formerly the principal if not the sole market crop on every farm in lower and middle Virginia. The subsequent exhaustion of the lands, the low price of this crop for some years, and the extension of and preference for wheat culture, all served to put an end, almost entirely, to the culture of tobacco in the tide-water region—and greatly to restrict the extent in the upper country. Having never cultivated this crop, I have no personal experience of its value as a market product. But whatever may be its advantages or disadvantages in other respects, I have no doubt that tobacco culture is an admirable part of a rotation which would otherwise be entirely of grain and grass.—All testimony concurs in putting tobacco as the best known preparatory crop for wheat. And this agrees entirely with the principles which I have stated. Tobacco requires and must have rich land, and thoroughly cleansing tillage. Thus the land is left for wheat both rich, and clear of weeds. But further, from the total want of similarity between the two plants, it may be presumed that no insect which could feed on wheat, can live through the preceding growth and tillage of tobacco. Therefore there is gained the still more important object for the wheat, of the total removal, for the time, of all its insect enemies. It is safe to infer, that wherever tobacco-culture is expedient and profitable, it will be a valuable improvement in any rotation to make the tobacco crop, so far as it extends, precede wheat. Where thus substituting Indian corn, as the preparing crop for wheat, the benefit of the tobacco in the rotation will be still greater. And I also infer, though merely on the theoretical grounds stated, that tobacco, on account of its dissimilarity to all other crops, may safely follow any other in the rotation; but will most advantageously follow either grass or a broad-cast grain crop, inasmuch as tobacco cannot be depredated on by any insects left by these preceding crops; and its thorough cultivation must prevent any damage, or material inconvenience, from the vegetable pests nourished by former crops.

But it was not for this valuable quality of the tobacco crop that it was prized; and indeed until lately, it rarely made a part of any regular rotation. In the early time of our agriculture, tobacco was generally cultivated in Virginia as cotton is now in the more southern states—year after year on the same field, as long as it was deemed the best product for market, and the land was still able to yield a remunerating crop. Or if alternated, it was with corn, a very similar though less perfect culture, and a still more exhausting crop. Thus, the peculiar value of tobacco, as a rotation crop, was lost; and its peculiar cleansing culture was not only put to no proper use, but actually was injurious to the land by the continuation rendering the soil more subject to be washed off by rains.

There is another crop in a small portion only of Virginia, which serves an excellent purpose in the ordinary rotation, and this without seeding, without design, and, in most cases, without the cultivators being able to avoid the occurrence, or perhaps without their suspecting how much benefit they derive from this growth. This is the Eastern Shore bean. (*Cassia chamæcrista.*)

The lands of Accomack and Northampton, the two "Eastern Shore" counties, are mostly too sandy for successful wheat culture. The

general (designed) rotation is 1. corn, 2. oats, alternated and continued without cessation. There cannot be a viler or more exhausting rotation, or one more offending against all principles of proper succession of crops. But fortunately the bounty of Nature has provided a third, and also a manuring crop, which, notwithstanding the taking off a grain crop every year, serves to prevent rapid exhaustion, and even prevents any loss of fertility, if care be used to preserve and apply other ordinary farm-made manures. As soon as the crop of oats is reaped, the bean crop, which had before sprung from seeds left, by the former growth, in the land, grows rapidly on this peculiarly favorable soil, and before frost, the land is thickly covered by this leguminous and therefore good manuring crop, of more or less luxuriance according to the fertility of the land, its sandiness, and perhaps also the quantity of marine salt in the soil.*

Hence, this two-field rotation is not simply of corn and oats, in alternate years, but with a secondary green and manuring crop of the Eastern Shore bean, regularly following immediately after the oats. Thus, though a two-field, and two-year rotation only, it is also a three-crop rotation, and one of these three a luxuriant and excellent manuring crop. This plant will not serve this purpose, and thrive so well as to cover the land, except with both the peculiar soil and incessant culture of the Eastern Shore counties.

Cotton is the great crop of seven or eight of the southern states, and is an important crop in some others. Yet almost every where it is cultivated without any proper interchange with other crops, and without the semblance of any proper rotation. This culture is generally continued on the same ground year after year; and thus, while its great cleansing effect as preparation for some other crop, is lost, it is made the indirect means of causing great and universal waste of fertility. The mere production of cotton must be very slightly exhausting to the soil. The great bulk of the plant, the stem, branches, leaves and pods, and also the seeds, are returned to the land, and all which are converted to manure. The cotton fibre alone is necessarily removed—which is of very small quantity in comparison to the other parts. Notwithstanding this very light drawing from the alimentary funds of the soil, this culture is in general one of the most exhausting and destructive of fertility. The continued tillage and turning of the soil, in a warm climate, induces the most complete decomposition of all vegetable matters contained; and if the crop does not take up these new products as fast as formed, or if the soil is not so constituted as to combine with and to fix them; these successive products of decomposition are carried off by the rains and the air, and so are lost. Further and still worse—if there is any considerable inclination of the surface, the always clean and finely pulverized soil is swept off by every heavy rain, until all is removed down to, or even into the barren sub-soil. It is a melancholy subject of reflection that nearly all the lands of central Georgia, and other undulating lands of the southern states, are in this rapid course of waste, and destruction of fertility.

It is not for me to pronounce what precise change of this bad system ought to be preferred. Though having some experience of this crop, and on a large scale for Virginia, I do not know what other crop would best precede or succeed cotton culture. But if referring for instruction to the general principles and laws of rotation, it will be obvious that other crops should intervene with cotton. Besides losing, in its continued culture, the advantage of the clean and perfect preparation of the land for some other and a broad-cast crop, and the inducing of exhaustion of fertility by too long continued decomposition and exposure to washing rains, the sundry diseases, and the other disasters caused by known legions of various kinds of insects depredating exclusively on cotton, are doubtless the results of this growth remaining year after year on the same land, to breed and feed its numerous peculiar enemies.

There are more varieties of visible and known insects preying upon cotton, and more diseases of that crop, (which also probably are caused by other and invisible insects,) than of any other of our great crops. And this condition is precisely such as might be expected from the doctrine I have presented. Cotton covers the same large fields for years together in numerous cases. Even when there is an intermission for a single year, other cotton fields are in contact, and ready to receive and support, and encourage the further propagation of the myriads of different kinds of insects. Where more than half of all the cultivated land of a broad region is always under cotton, the insects of all kinds peculiar to or preferring cotton as their food, must increase and depredate in the greatest possible measure.

The value of the southern pea as a manuring and preparatory crop has been considered as the most important feature of my present rotation. But in the best cotton region, which has also the best climate for peas, the latter crop would have other values, as a grain or market crop, or a forage crop. It may be either (as is usual there) made a secondary crop to follow corn, in the same year—or occupy separate ground, and be either tilled or broad-cast. The great and peculiar values of this crop have not yet been duly appreciated, or made full use of, and especially in the most favored region for the growth. It may enter

* The most luxuriant growth of this bean, by far, that I ever saw was, on one of the sea-islands of Northampton, (Hog Island) where the soil is a dry loose sand, and lying so low as to be sometimes covered by the water of the ocean, when unusually raised by high tide and violent east wind occurring together.

profitably in different plans of rotation in various characters—whether the products be designed for market, for stock feeding on the ground, or for manure—and whether the growth be used for cleansing and for alternation with crops of very different character.

In England, root-crops, beets, carrots and especially turnips and potatoes (Irish) make valuable parts of rotations. Experience has not found the same value of these roots in our dryer and warmer climate. But there is another root, the sweet potato, especially favored in growth in the cotton region, and there always extensively cultivated, which ought to be made to give its peculiar benefits, of deep and thorough pulverization of the soil, to some other succeeding crop the most requiring such preparation, and also of different character from the potato.

There is another class of plants, of the pumpkin or cymlin tribe (*cucurbitaceæ,*) almost peculiar to the agriculture of the United States, and which, from their difference of character from all other cultivated crops, would seem to offer good subjects to be embraced in a rotation. The values of these plants, and their culture, and the amount of product, have not been tested with any accuracy; and they have not been at all tried as parts of a rotation. Pumpkins have been very generally cultivated as a secondary crop with corn. Cymlins have been almost confined to garden culture. The value of both for succulent food for stock must be very important. But of the extent of this value, or of the rate of production there is little known—and nothing of the fitness of these crops to vary and improve a rotation. For this last purpose they possess the important quality of differing greatly from all other usually cultivated field crops.

Barley and rye, where now profitable, might take the place of wheat or oats in any scheme of rotation. Hemp, flax, buckwheat, are important crops in other regions, though scarcely known in our culture. Where desirable to introduce these or any other crops, their respective places in a succession of crops must be fixed according to their respective characters, and to the desired difference of agricultural character from the preceding and succeeding crops. The general principles set forth, have only to be kept in view, to adapt any new crop to any rotation.

The pea raised in field culture in New England is a very different plant from the pea so valuable for the south—though one of the usually worthless Reports from the Patent Office brings in both products as of one kind. The northern or European pea is one of the many varieties of which some are cultivated in our gardens only, and furnish the delicious table vegetable known as "green peas." They are much better adapted to a northern climate; and in northern Europe, and in New England, some of the more hardy varieties are cultivated to profit as broad-cast field crops. It being a pod-bearing plant, growing broad-cast, it may safely be pronounced a cleansing and manuring crop, and because of these characters, well suited to precede wheat; and if sufficiently productive, to occupy the same place in a northern rotation that our southern pea may in lower Virginia, and farther southward.

Objections noticed, and General Remarks.

The strongest objection made to the general six-field rotation described, (not the variation therefrom,) is the greater labor required in the necessary ploughing (breaking up) for wheat culture of the space of three fields; whereas the five-shift rotation requires but the ploughing of two fields for this purpose. This difficulty is not so great as it at first appears. My arable land, about 750 acres, on the five-field rotation, would give 150 acres to each field. The ploughing of two of these for wheat (one of clover and one after corn,) would amount to 300 acres. The same surface on the six-field rotation, gives 125 acres to each field. One clover field is ploughed for wheat, and the pea-field is ploughed twice, (once for sowing peas, and again to plough under the vines) the three operations making 375 acres of ploughing, or 75 more than on the five-field rotation. This additional labor (as well as the expense of seed) is more than compensated in the greater immediate product—besides the greater prospective improvement and product to be obtained from the latter rotation giving one more crop of green manure, in the pea-crop ploughed under.

But the labor of one of these ploughings is so light that it costs very little. This is the ploughing of the last year's corn land in the spring for sowing peas. The old annual grasses are then dead, and so nearly rotted as to offer no impediment to the plough. The roots of the corn-stubble also are half rotted and very tender. There is usually nothing else on the land; and the ploughing in March, April, or May, as may be most convenient, is very easy and rapid work. A two-mule plough will easily break two acres or more. Further: there is usually enough spare time of the teams to plough this field, after the breaking of the land for corn is finished, and before tillage labors begin; or if later, when a hasty rain has made the corn-field too wet for tillage, and the earth is too wet for hauling marl, and yet the firm land designed for peas is in good condition for being ploughed. This ploughing has taken very little of team labor that could have been otherwise used advantageously.—The only serious difficulty has been produced by postponing the ploughing so late, that the soil was so hardened by drought (in June) that it was ploughed badly, and with great labor, and in some cases could not be ploughed at all, in proper time for sowing peas.

But the proper ground of comparison of this with any other rotation, is not the difference of labor alone, but of both the respective labor and products of each. The labor re-

quired for this six-shift rotation is certainly greater than that of the five-shift. But so will be the products, and in a still greater excess.

Another objection that has been brought is that this rotation is unnecessarily enriching—that is, furnishing more manure in green crops than required to maintain progressive improvement of crops. This fault is certainly the best that could exist. Any such extent of manuring will produce a proportionate increase of grain crops. And, if desired, it is very easy to take more of exhausting products from the land. For example; in planting of the corn-field generally in peas, and harvesting the product of ripe peas, for seed and sale, and vines for forage—and in extending grazing on the clover-fields, and thence deriving more profits from live stock. Another extra draught from the richest spots might be made thus, as has been already tried with success, some years ago. On the richest and deepest soil, (the bottoms of ancient ponds, designated here as "black" or "mud land,") the wheat sometimes grows so thick and rank as to smother and kill all the young clover. In such cases, if the ground is moist and soft enough, it will be well to plough such parts immediately after removing the wheat, sow peas, and on the vines ploughed under, make an extra crop of wheat. The like course being pursued the next year, will bring this spot under the general regular wheat crop with the remainder of the field, in wheat on clover-fallow.

The like course of taking an extra crop of wheat, preceded by an extra green manuring crop, may also be adopted for ground much infested with perennial root-weeds, as wire-grass. But in any such case, if the land is good, the pea-manuring will give as much to the land as the succeeding wheat crop will abstract of its productive power; and therefore the additional cropping in both these cases would not render the rotation more exhausting.

There would be other ready means for withdrawing or taking compensation for any excessive and unnecessary fertilizing supplies which this rotation might offer in future time, or to land already highly enriched. The first growths of clover, succeeding both crops of wheat, I have already advised the removal of, by either mowing, or grazing permitted during the natural time of first blossoming only. Among the reasons stated for this advice, was the cleansing of the land of the weeds which, if not cut off before seeding, would, by their product, pollute the next crop of wheat. For this purpose, the closest grazing of the clover-field, for a short time only, before these weeds form their seeds, (or late in May,) would be very beneficial; and not only for destroying these bad weeds, but also in giving a more close texture to the soil, and so making it more suitable for both the succeeding wheat and clover. According to the general plan, and for progressive fertilization, it was before advised that the stock should be soon withdrawn, and the second growth of clover entirely given to manure the land. But if such manuring should be deemed superfluous, the grazing might be continued. In this manner many more cattle and sheep might be kept, and much more of the products of live-stock obtained. With suitable and regular supplies of summer grass and winter forage, stock-keeping and fattening would be more profitable than exclusive grain-raising for market. Unfortunately, our sometimes severe and altogether uncertain summer droughts prevent regular supplies of grass even from the best lands, and present a formidable obstacle to extensive and profitable feeding of live-stock for market.

For the Southern Planter.

RAT PROOF CORN CRIB.

Mr. Editor,—Having for several years past sustained considerable loss from the rats and mice upon my corn after it was housed, I determined last summer to erect a crib, from a plan of my own, which I was satisfied would be proof against their depredations, and at the same time preserve the corn in a sound, sweet condition. Accordingly, I had the house built under my immediate directions, and cribbed my corn in it last fall; and though the temptation of a well replenished crib has been presented to them ever since, I am gratified to know that neither rat nor mouse has yet been able to show its head inside of its walls.

I am indebted for my success, not to any fortuitous circumstance, but to the merit of the plan itself; and as I now have, what has to me long been a *desideratum*, a neat, cheap and durable crib, perfectly rat and mouse proof, I propose to give you a description of the plan, from which any of your readers, who may desire to do so, may erect one in time to house the incoming crop.

My crib is a framed building, the frame of which is executed very much in the usual way. The sills, which should be twelve by eight inches in size, framed with the sides down, rest upon brick pillars, twenty inches in height, and of a thickness corresponding with the width of the sills, so that there will be no projection of the pillars beyond the sills, to furnish a lodgment from which the rats can attack the floor of the building.

The number of pillars will depend upon the length of the house. One at each corner will be sufficient for a house of fifteen feet and under; if over that length,

there should be one of like thickness under the middle of the side sills.

To render the house perfectly steady, the pillars should extend at least two feet from the corners under the sides and ends. The floor is laid of well seasoned oak plank one inch and a quarter thick and a foot wide, and securely nailed to the sleepers, which are mortised into the inner edges of the side sills, in such a manner that the upper edge of the sleepers will be one inch and a quarter below the top of the sills, so that the plank when laid down will bring up the floor to a level with the top of the sills, which will form a part of the floor. Should the body not exceed nine feet in height, the studs should be four and a half by two and a half inches, and the corner posts four and a half by six inches in size. If it exceed that height, they should be wider. It must be securely braced, and all the framing of oak. The roof which is shingled, should project from a foot to eighteen inches, according to the height of the house, over the sides and ends, to protect the body from the weather. Oak strips, two inches wide and one inch and a half thick, are put on the outside of the frame horizontally, at every two feet, by being let into the studs and posts a depth equal to their thickness, so as to present an even surface on the outer side. To these strips and to the sills and plates the weather boarding, which is put on vertically, is securely nailed. The boardings consist of tough oak plank, sawed one inch and a quarter thick and five inches wide, and of a length corresponding with the elevation of the house. The planks should be thoroughly seasoned, and the edges jointed to a gauge, so as to be of an equal width all the way, and should be dressed on the outside if the house is to be painted. They are nailed on *a quarter of an inch apart*, and extend from a half inch below the bottom edge of the sills to the sheetings. The distance apart is best regulated by having strips a foot long and a quarter of an inch thick, which should be placed between the edges till the planks are nailed. In order that the boarding may be well fitted to the sheeting, the rafters should be first nailed on, and a plank tacked to them in the place of the sheeting till the boarding is on. This part of the work should be well executed, and the directions given strictly followed, as the efficacy of the house to turn rats and mice depends upon the weather boarding being so put on that no crack can be found when the house is completed that is more or less than a quarter of an inch in thickness. The boarding when seasoned and jointed will be very little, if any, over four inches and a half wide, so that there will be a crack of a quarter of an inch, extending from bottom to top for every four and a half inches, for airing and drying your corn, which will ventilate the crib as thoroughly as can be desired, and will perfectly dry any bulk of corn not exceeding nine feet thick. The importance of having the weather boarding and flooring perfectly seasoned is now obvious, for otherwise the cracks will be so enlarged by shrinkage as to permit the rats to enter.

The projections of the roof at the sides is easily effected by letting the feet of the rafters extend over the desired distance; and is accomplished at the ends, either by the plates extending the requisite distance, and putting on an additional couple of rafters at each end—or, when the projection is less than fifteen inches, by permitting the sheeting, which should be an inch thick, to extend over and nail on a verge board to the end of the sheeting.

The weather boarding should be nailed at the sill with twelve penny nails, one in each edge—ten penny will answer at the other places of nailing. A house thus constructed is as strong and secure as can be desired, and I had as soon attempt to break into any crib I ever saw as mine.

The height and length of the house can be increased to suit the wants of the builder, but its width should never exceed nine feet, unless the corn is perfectly dry when housed. Rooms of convenient size may be cut off for shelling, or partitions may be erected for keeping the corn in separate parcels, if desired.

The shutter to the door should fit closely, and the upper step leading therein be at least two feet and a half below the door-sills to prevent rats from jumping in when it is open.

I would advise by all means that the house be painted on the outside, not only because it will render it more durable, but that it will prevent shrinkage of the weather boarding and add greatly to its appearance.

Rats cannot climb or adhere to the walls of a house thus constructed for a moment, nor can they, in consequence of its elevation from the ground, effect anything from that quarter. Now, as to its cost. My crib, built in a village where everything was purchased at high prices, and the materials hauled eight miles, holds about

fifty barrels, and cost, including the painting, about forty dollars. In the country, where materials are cheaper, and where the farmer can do his own hauling, I am satisfied that a house, holding one hundred barrels, can be completed for sixty dollars; and one holding one hundred and fifty barrels, for eighty dollars.

These prices may, at first view, seem to be high to pay for a corn crib; but I am satisfied when we take into the estimate the saving effected in the quantity, as well as the preservation in quality of the corn, by the exclusion of rats and mice, together with the neatness and durability of the crib, it will be true economy to adopt the plan and incur the expense at once. You will at least have the satisfaction of knowing when you partake of the "staff of life" that it is not made of corn in which the mice have raised, and through which the rats have roamed at pleasure for months past.

C. Y. Thomas.

Martinsville, Va.

For the Southern Planter.

SMUT IN WHEAT.

EXPERIENCE WITH BRINING AND LIMING AS A REMEDY, AND MODE OF APPLICATION.

Mr. Editor,—From various quarters, as well as from the Planter, it appears there is much concern if not alarm at the prevalence of the smut in the crops of wheat. To inquirers on the subject it may be useful to have farther testimony of the efficacy of the brining and liming so generally known or heard of.

Some twelve or thirteen years since the crops became very much infested with various offensive interminglers, especially spelt and garlic—the consequence of the fallowing system in a great degree. To correct this evil, I got into the habit of floating or rather immersing my seed in the strongest brine and skimming off the lighter bodies with a miniature net. By pouring the wheat, in a thin or slender stream, into a wide half hogshead, and that half full of the brine, and stirring with the hand or a paddle frequently, most if not all the lighter bodies will float, when they are readily removed. After practising this process for several years much to my satisfaction, I bought a parcel of old books at an auction, (I like old books, Mr. Editor, they are generally truthful,) and found among them one on agriculture.—Among the diseases of wheat treated of by the author, Uredo Fœtida was very descriptively spoken of, and the remedy set forth very clearly, viz: brining and liming. The origin was this: A vessel loaded with wheat was stranded on the coast (of England, as well as I recollect,) and the cargo fully saturated with sea water. This occurring at seeding time, it was bought by the neighboring farmers at a very reduced price for seed. The succeeding crop from this seeding was found free from the disease, whilst the crops of the country generally were grievously injured by the smut. Now this was playing precisely into my hand—I had only to lime. This is effected by taking the seed out of the brine as soon as well *washed* and freed from the garlic, spelt and cheat, and putting it into a barrel fixed on legs with holes in the bottom, which are covered over with pieces of old stocking stretched and tacked over them so as to retain the wheat and permit the escape of the thin whitewash. This is poured in suddenly, so that every part of the seed shall receive an equal portion of the fluid wash. The seed is now ready for the sower, but should it not be sown for two or three days, no injury will result, if it is kept spread. When the seed is thus treated and permitted to get dry, each grain will be found covered with a very thin coat of lime, not sufficient to deceive the sower materially as to the quantity thrown at each cast, nor so roughened as to prevent its gliding through the openings of a well constructed drill—though, this last remark is mere opinion, all others being the result of observation. If the grain while wet be rolled in lime, the bulk is increased inconveniently in several respects which are sufficiently obvious.

The barrel should be mounted on legs pretty much as if prepared to make lye, but so far apart as to receive a tub beneath to catch the escaping lime water or whitewash. Both the brine and whitewash are repeatedly used, and added to as they become exhausted. Since adopting this preparation of seed-wheat, I have not seen a grain of smut in my crop, the growth of such seed, and this for some twelve or fourteen years. I understand a man in Nottoway tried the brining and liming last fall, and is fully convinced from the result, that the process promotes the disease.—There was some blunder in his process, evidently. A gentleman of this county sowed a bushel of salt to the acre on his

wheat recently seeded, last fall; his crop suffered from smut—therefore, salt alone does not destroy the smut seed.

THOS. MEAUX.

Amelia, Sept. 13, 1852.

For the Southern Planter.

WELL DONE.

"That which is worth doing, is worth doing well."

Mr. Editor,—I once made a rail fence around my corn lot, and said that will do; but, behold, it did badly, for the panels were so straight that the wind blew it down and my neighbor's cattle destroyed a portion of my corn, and they would have destroyed all, had I not have cut hundreds of poles and brush, wherewith to prop and tie up my fence, so that the winds could not shake it nor the cattle get to it. And, my sons, this is not all about this matter, for I shot one of my neighbor's oxen, and we had a fall out and a lawsuit about it. And yet this is not all, for the next year the fire got into the leaves and brush about my fence, and all went together like wild fire. So my crop of corn did not pay for the fence, and the fence gone. Now, said I, I will make a stone fence in this clear place, and at it I went. Well, when it was done, it looked quite neat, and I said, now let the winds blow, and the fires rage, and the oxen charge, but I ask no boot; and so I did not for that year. But the next winter the frosts gave my fence a shake on the hill side, and much of it tumbled. Now, if I had dug a level about 20 inches wide, and laid thereon some large stone as a foundation for the lower side of the fence, I would have saved many dollars, and my mortification of mind.

I once put up a large rack, and filled it with straw for my cattle. The feet of the poles not being well planted in the ground, it fell upon and killed a valuable cow for me. So not only my labor was lost, but I was minus one cow worth $25.

I once owned a piece of ground infested with the wire worm; and neglecting to plough in the winter, I made no corn. So my labor was all lost. And, worse than that, a continuation of wet weather forced me to plough the ground whilst wet, and it being clay, it was thereby much damaged. Now, my sons, I thought this was bad, but one evil begets many; so I had to borrow money, and go ten miles to buy bread.

I now own a meadow of five acres, through which, in days past, I cut a ditch to conduct a small stream, and said that will do. In June I mowed the meadow and had the hay nearly ready for stacking, when a heavy shower of rain fell and swept the platter. By this operation I lost one hundred dollars' worth of hay. Now, my sons, just look at the case: Had I spent only ten dollars more in cutting a ditch sufficient to convey the water, (like my neighbor John) I would have saved ninety dollars, and bad feelings, and my credit too.

Being a little stingy, I once trusted my spring house door to the tying of a rope, rather than expend money in the purchase of a lock; and behold a rogue took thence a large crock of butter, and a big jug of milk, altogether worth about six dollars. Now, my sons, see that again: twenty-five cents would have bought a lock, then all were safe, and I should not have grieved at finding out I had a bad neighbor.

I told you above that I was stingy—aye it is bad for one to have to tell the truth on himself; but so it was, once my man George complained that he slept very cold, and requested me to give him another blanket, but I told him I could not afford it. Now, my sons, the consequence was, that I had to afford to pay a doctor twenty dollars to cure him of rheumatism, and one month's work lost beside.

The above reminds me of one of my neighbors who neglected to cram his house with mud until the cold weather was upon him. The consequence was, the mortar all fell, six additional blankets had to be bought for night, and an additional load of wood for day; and what was lost by the operation you can say as well as I.

I once had two neighbors, one a real German and the other an old-fashioned Virginian. The German fenced a lot of grass for his cow, where she was always ready to be cared for, and to be milked in due season, rain or shine. The consequence was, the family had always plenty of milk and butter of the very best quality. The Virginian turned his cow on the commons, and told her go ahead old lady, now shift for yourself. The consequence was, the family had very little milk or butter, and that of very poor quality; and when the children cried for milk, I don't know where my jug went to. Now, my sons, although I am getting a little out of order, yet I will tell you, every day, Sunday or no Sunday, about two hours by sun in the evening, a negro was started through the

neighborhood in search of this cow. I have often heard the inquiry, "has you seen any thing of my cow Pidy to-day?" Sometimes the cow was not found at all; but generally she was trotted home to be milked, and then starved till next day ten o'clock; and yes, when ten o'clock did come, the flies came too. I don't know which to most pity, the old cow, the owner, or the law requiring the German to fence up his fields to keep off old Pidy.

Now, my sons, you see that experience has taught me much; but behold it can now profit me nothing, for I am old and compelled to quit business. I can nevertheless write, and before bidding you adieu for the present, I admonish you to ever bear in mind that any thing which is worth doing is worth doing well.

OLD AMHERST.

August, 1852.

For the Southern Planter.

TO KEEP POTATO SEED.

Mr. Editor,—As so many of our good citizens have failed the last winter in preserving their sweet potato seed, and thereby suffered much inconvenience attended with expense, I will now do what I have long intended, and give the world an infallible remedy for this evil. Two gentlemen of my acquaintance took supper with me the other night in search of seed, and said they had intended to ride all night if they could not otherwise obtain a supply. Now why should this be endured, when a simple remedy is at hand? If the Southern Planter shall perform no other service during the year, this knowledge will more than repay the subscription price to those who need it. But is our panacea really infallible? In proof I would say, that my father failed to keep seed almost invariably for more than twenty years. He tried many experiments, and concluded there was something radically amiss in his soil and cellars; but upon this plan his son-in-law and successor invariably sells to his neighbors. The whole secret is in the use of dry oak leaves applied to the sides of your cellar or kiln as an absorbent, with a few on top. Let the potatoes be put away immediately, or as soon as convenient after they are dug, and if in a cellar apply the leaves freely, say a foot thick at the sides as you raise your heap, and cover on top to about the same depth. Do the same for those intended for use. To obtain room, or avoid rats, a kiln is sometimes necessary remote from any house or stack, which can be made upon the ground a little elevated; then it is necessary to apply leaves, boards and earth, and enclose it in a rail pen, and fill the pen with leaves or straw and cover it with plank or boards. It is best to leave a small aperture at the top of the kiln for a few weeks, that the vapour may escape.

MATTHEW W. JACKSON.

For the Southern Planter.

CLOVER—PLASTER—THE ROLLER.

Mr. Editor,—Having succeeded, in this year of general failure, in obtaining the best stand of clover I have ever had, I will tell you how I did it.

My oats land, which was in corn last year and subsoiled, was broken up ten inches deep with a two-horse Eagle plough, (the crack plough of Yankeedom, which took the premium at the World's Fair,) and sown the last of March and first of April with two bushels of oats to the acre, and harrowed twice. Half a gallon of clover-seed and the same quantity of timothy, thoroughly mixed with a bushel of plaster, were then sown to the acre, and the ground rolled with a two-horse roller made in the simplest way, of an oak log, seven feet long and a foot and a half thick, and costing only four dollars. The rollers levelled the ground, broke the clods, buried the grass seed to the right depth, and pressed the soil tight upon it; while the plaster gave the young clover the very food it required. The crop of oats was very fine, the stand of clover is the best possible, and the field now presents a clean, smooth surface for the operation of the scythe next summer.

At the same time, I sowed my wheat land with clover seed and plaster, and rolled it. The stand of clover is good, but not quite equal to that on my oats land. The rolling, I thought, improved my wheat, besides burying the clover-seed and crushing the corn-stalks flat with the surface, (the corn was cut up and the wheat put in with tongue-ploughs.)

I agree with your intelligent correspondent, Mr. Newman, that a quart of clover-seed to the acre, vitalized and stimulated by plaster at the time of sowing, will secure a better stand than twice or four times the quantity, without plaster.

I dress my clover fields, *early* in the spring, with a bushel of plaster, a bushel of ashes, and a bushel of slaked lime, mixed, to the acre, and never fail with a tolerable season, in securing fine crops of clover.

A portion of my corn ground, which was very cloddy, was brought into fine tilth by running the roller over it several times. A smart boy will roll ten acres a day with ease. I consider the roller one of the most valuable utensils on my farm, and I cordially recommend it to all my brother clod-hoppers.

C. C. B.

Rockbridge, Va.

THE SOUTHERN PLANTER.

RICHMOND, OCTOBER, 1852.

TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

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The following are the rates of postage on the Planter, *per quarter*, for the distances annexed—to be paid quarterly in advance:

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GUANO.

We have been requested to state the best mode of using guano for wheat. We can do it very easily. Guano has now been used on all kinds of land in this State for several years. It has been found to answer admirably on all, except, *perhaps*, (?) rich land; it is doubtful if it pays well on that; though definite experiments are yet wanting to ascertain the fact. The usual quantity sowed is two hundred pounds per acre—if on very poor land one hundred pounds more. It is applied at the time the wheat is, and by the same operation. The late Peter Meriwether, of Albemarle, "covered it with one, two, and three-horse ploughs, with the coulter, and with the harrow;" "he could see no difference from the different modes of application whether covered shallow or deep."

We put it in with a shovel plough—the coulter shovel, not the bull tongue—and with a one-horse turn plough or mould-board. But we do it because we put in our wheat in that way. Where wheat is sowed with the drill the guano should of course be applied previously, and we think at the first harrowing. Certainly, the land, if already in good order, should not be harrowed or worked again merely to get the guano in. Rather than do that, we would plough in both together, omitting the use of the drill entirely even if it had been obtained expressly for wheat sowing, because there is great risk of getting the land too fine for wheat thereby, as much of it *is* every year in the ordinary course of what is called a thorough preparation.

Guano abounds in lumps; these must be got rid of and the whole mass reduced to a fine dust. Dr. Osborne, of Willow Hill, Surry county, in a communication which we published last fall, recommended that water be plentifully sprinkled over the bags, so that the clods might absorb it, and become pulverable by mere pressure of the hand. But one or two gentlemen who tried the plan did not succeed with it. It

was objected that it interrupted the regularity of the seedsman's cast, and that they would not or could not squeeze up a good many of the lumps. We had no opportunity to try it. Another mode is to sift it, and then mash the lumps with a maul, repeating the process as often as necessary. No doubt it will facilitate this latter operation to sprinkle the lumps plentifully with water and let them remain awhile before attempting to beat them, and the sifting will be much expedited by taking out the fanners or wind-mill from an old wheat fan and working the sifter alone. Just previous to sowing, the whole should be slightly moistened. It will not annoy the seedsman so much, will not escape so much into the air, and its volatility will be slightly checked by the affinity of ammonia for water.

There is another mode of application that we commend for experiment to the attention of those who wish to use guano and yet fail to get it in time. It is to sow it on snow, which as it melts, dissolves the guano and carries it into the land. We have heard of one case of this sort in which it was used with as much success as in any other way, and we were so much struck with it that we mean to try it on grass to the extent of a ton this winter.

We have seen it recommended, very confidently by some, to apply gypsum with guano. We shall be able to speak more decidedly on this point when we get the result of a chemical investigation on it now in progress. At present there is great deal of mere guess work on the subject. No one should omit to sow guano merely because he cannot get gypsum to apply with it.

What the quantity of guano sold this fall amounts to we have no means of knowing. But Baltimore, Alexandria, Fredericksburg and Petersburg have each sold a considerable excess over what they sold last year. In Richmond, we learn that the quantity has reached seven thousand tons, being about thirty per cent. increase, and it has gone up from $43 to $52 per short ton, under the influence of a demand which cannot be anything like supplied even at the latter price. This is certainly very decisive evidence of what it has done, but it should make the purchaser more cautious. It is an article easily adulterated, and very extensive frauds have been perpetrated in its sale to English farmers, in some cases to the extent of substituting an article entirely spurious. We have heard of no other fraud in this country than the increase of its weight by water. This we have known to be done.

COUNTY AND DISTRICT AGRICULTURAL SOCIETIES.

We have received a copy of the "list of premiums, and rules and regulations for the first Agricultural Fair of the Princess Anne Agricultural Society to be held at Kempsville on Tuesday and Wednesday, the 23d and 24th of November, 1852. We have examined the rules and think them decidedly good, as also the list of premiums, which is quite a long one considering the Society is attempting its first exhibition. There is between $200 and $300 to be competed for, which we take to be a liberal contribution to begin with. We are glad to learn that there is much fine feeling manifested by the members of the Society, and that it is expected that the fair will be well attended. We hear also that the competitors will be sufficiently numerous to make the exhibition interesting, and give decided impulse to the farming interest in that section—a section, we take leave to say, "not a whit behind the very chiefest of" our counties in agricultural and still more remarkably *horticultural* advantages. Looking to remuneration on investment, (rather than to acreable produce which is only one element of farming profits,) we pronounce that the whole of lower Virginia is unrivalled in

the Union; and no part of it is excelled by that portion contiguous to Norfolk, which last year, in the very beginning of its development, is said to have exported upwards of half a million's worth of fruit and vegetables to northern markets.

We have also learned that the Loudoun Agricultural Society, which owes its existence to the public spirit, energy and generosity of its President, Ro. L. Wright, Esq. of that county, is to hold its first exhibition at Leesburg on the 19th of October.

The Valley Agricultural Society, Lewis W. Washington, President, holds its next (second annual) exhibition in Charlestown, on the 21st and 22d. At its first meeting last fall it was well attended and well represented in all the agricultural products of its region, among which it can boast several herds of the best cattle, and several flocks of the best sheep (long woolled) in the State of Virginia.

The latter of these Societies will be addressed by Mr. Bowie of Maryland, the former by Mr. Hallowel of Alexandria. We have not heard who is to address the farmers of Princess Anne.

We have not heard of any other exhibition to take place this fall, and presume there will be none except by the Fairfax Agricultural Society, the particulars of which have not reached us.

Other societies have been established in Virginia, but some of them were stillborn and the rest are in a state of suspended animation.

THE JOINT WORM.

In addition to what we published in our last number on the joint worm, we insert here the letter of Dr. Harris of Cambridge, whom we have previously introduced to our readers as the ablest entomologist of the Union. We hope that a conference between Dr. Cabell and himself, and a comparison of their opinions may develop something more satisfactory than their researches have yet been able to throw upon it. The settlement of the question is a matter of practical importance in this: if the animals discovered are all *parasites*, then there is reason to hope that we are near the end of its ravages, as the fact that none others have been discovered proves that the eat*ers* greatly abound over the eat*ees*, but if they are not parasites then we can see no reason to expect exemption yet awhile, and we must resort to the means pointed out by Dr. Harris, and to a more or less extensive discontinuance of the crop, for the destruction of the worm.

"Cannot," says Dr. Harris, "some of your intelligent planters take the same pains to ascertain the habits of the *eurytoma* that the farmers of the middle and northern States have to investigate the habits of the Hessian and Wheat flies?" No doubt they can, as they also did in the case of the Hessian fly, and as Dr. Greene of Culpeper has done in the case of this fly, the joint worm; but we apprehend that a scientific investigator can shed more light on the subject than the most intelligent and observant farmer however well disposed to the work. A man educated to this business, it seems to us, is alone competent to pursue it satisfactorily.

We have the opportunity of getting such an one if we have the sense and the liberality to avail ourselves of it. We have learned (altogether incidentally) that Dr. Asa Fitch of Salem, New York, who has been investigating this subject to a very considerable extent already, deems it a matter of such importance that he means to propose to the Executive Committee of the Agricultural Society of that State to pay his expenses into Virginia at the proper time that he may get full information on the spot of the habits and history of the insect. We hope, for the honor of Virginia, that the invitation may be extended from this State—and we now propose that it be given by our farmers. We learn that the actual expenses will not exceed seventy-five dollars. And a very

small subscription even from the more enlightened of the sufferers will amount to vastly more than this sum. To permit him to come on any other terms would really be a reflection upon us all, a stain that we would avert by paying his expenses out of our own private purse if we had the means.

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For the Southern Planter.

ON THE JOINT WORM.

BY THADDEUS WILLIAM HARRIS, M. D.

The peculiar disease, now affecting wheat in Virginia, seems to be of the same nature as that which attacked barley in Massachusetts above twenty-five years ago. This disease consists of hard, woody, gall-like tumors on the stem of the plant, situated mostly in the sheathing bases of the lower leaves, or in the second or the third joint, more rarely in the substance of the stem itself. On being opened, these tumors are found to contain several little yellowish white maggots, called joint worms in Virginia, each lodged in a separate cell rather larger than its own body. These tumors, by their pressure and hardness, obstruct the circulation, obliterate the hollow of the stem, and prevent its due development, thereby greatly reducing the amount of the crop. The greater part of the maggots remain unchanged in the tumors through the winter, and in the following months of May and June are transformed to tiny, blackish, four-winged flies, belonging to the genus *Eurytoma*. Professor Cabell has ascertained that a very few undergo this change during the first summer. When first observed in Massachusetts, these insects were supposed to be parasites, in accordance with the known habits and history of others belonging to the same family; and it was thought that the real culprits would be found to be some species of *Cecidomyia*, or small flies resembling the Hessian fly and the wheat fly. Hitherto, however, no species of *Cecidomyia* has been obtained from the diseased barley straw in Massachusetts, or from the diseased wheat straw of Virginia. On the contrary, both, in repeated instances, have furnished large numbers of the same kind of *Eurytoma*. If, then, this insect be the sole cause of the disease, as Professor Cabell and others are inclined to believe, it becomes important to consider whether the history of the insect will suggest any means for diminishing or arresting its ravages.

As the disease is seated near the base of the straw, in or near the second or third joint, the greater part of the diseased portions will be left in the stubble when the grain is reaped. This fact has been noticed in barley fields in Massachusetts, and doubtless occurs also in the wheat fields of Virginia. Most of the insects remain unchanged in the stubble till the following year. If, then, we can destroy the maggots remaining in the stubble in the field, before they have completed their transformations and made their escape, we shall, in great measure, restrain their further propagation and increase; for it is in the winged state that insects propagate their kind. It has been found in Massachusetts that ploughing in the stubble has no effect upon the insects, which remain uninjured under the slight covering of earth, and easily make their way to the surface when they have completed their transformations. The only practicable way of destroying the insects, is *to burn the stubble* containing them. Some few may complete their transformations and take wing during the first summer, before the grain is reaped, and will thereby escape being burnt with the stubble; and these, if allowed to increase, will suffice to continue their race. The remedy suggested, to be successful, must be followed up in several successive years, and if generally adopted, and thoroughly and carefully employed, cannot fail to exterminate the *Eurytoma*.

Highly manured and thoroughly tilled fields, by promoting a rapid and vigorous growth of the plant, may render it less liable to suffer from the attacks of the insect. Large fields, well seeded, will probably escape better than those that are smaller and thinner sown, in which the insects, when about to lay their eggs, can penetrate easily and to a greater extent.

Cambridge, Mass. Aug. 18, 1852.

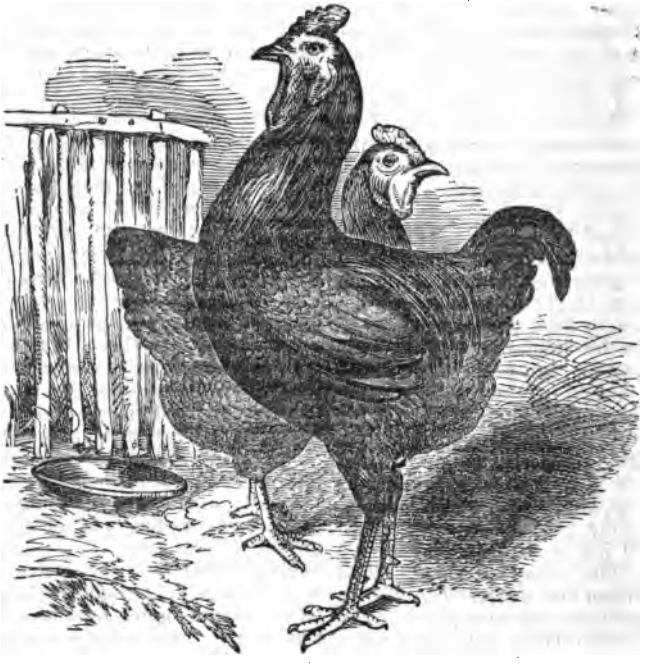
WHEAT DRILLS.

Our attention has been called to a new and improved slide drill, invented and made by S. & M. Pennock, at a cost of only $60 and $65 (7 and 8 tubes,) which we learn has been recently tried and approved of by Mr. Edward Stabler of Montgomery county, Maryland; in not breaking the

grain, or distributing it in unequal quantities, by a fast or slow walk of the team, the inventors claim for their drill a superiority over other slide drills. We understand that Mr. Stabler (Sandy Spring Post Office, Maryland,) will receive orders for the proprietors and have them made in accordance with his views and experience.

For the Southern Planter.

CHINA FOWLS.



This variety of fowl far surpasses, both in size and power, all that have ever been seen in the shape of poultry. This has led many persons, not familiar with zoology, to refer them to the family of *bustards*.—They are, however, genuine poultry.—Their general color is a rich glossy brown or buff. Besides their gigantic size, however, these fowls possess other distinctive characteristics, among which may be mentioned, as the most striking, that the wing is jointed, so that the posterior half can at pleasure be doubled up and brought forward between the anterior half and the body. The birds can do this at pleasure; and the appearance the manœuvre imparts to their form has procured for them the title of "Ostrich Fowl." The flesh is white and delicate. They are very prolific layers; the eggs are of a buff color and possess a very delicate flavor. The China fowl is well known in America under the name of Shanghai. A pair of these truly magnificent fowls can be seen at the book-

store of Messrs. Nash & Woodhouse, Eagle Square, upon application to Mr. Wm. A. Butters, who can furnish a few pair, which may be relied upon as being from the pure and original stock, imported into this country by Charles Sampson, Esq. of West Roxbury, Massachusetts.

P. D. B.

The following letter would have been inserted in the September number with pleasure as it is just what we wanted at that time, and as will be seen elsewhere, wrote for to South Carolina; but it did not come until the paper was in press. We again request that communications intended for a particular time be sent by the 15th of the month preceding; at farthest the 22d. Really valuable articles, such as Mr. Wilson's, sometimes lose nearly all their value from failing to reach us in time.

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For the Southern Planter.

SMUT.

Mr. Editor,—There has been an unusual prevalence of smut in many of the wheat crops of parts of this and the adjoining county of Buckingham, at the last harvest; and as blue vitriol affords a convenient, *certain* and cheap remedy, I, some weeks ago, promised several friends to furnish, for the September number of the Southern Planter, a short article describing the mode of using it. It was deemed desirable that it should appear in the September number, in order to give time to those who might wish to try it, to obtain, in good season, a sufficient supply of the vitriol, as it is seldom found, in country stores, in quantities sufficient for agricultural purposes. An absence of three weeks from home, to which I returned but a few days since, must be my apology for sending it to you so nearly upon the issue of your monthly publication.

I will mention, in the outset, as a necessary preliminary, that the wheat intended for seed should be made as clean as a good wheat-fan can make it. Then the operator, having provided himself with an iron pot, in which to dissolve the blue vitriol, and a vessel of suitable capacity for the wheat to be steeped in, may proceed in the following manner: Dissolve five pounds of blue vitriol in hot water, and add as much cold water as will entirely cover five bushels of wheat, which should be gently poured in, or, what is better, be passed through a riddle, in order that the light and defective grains may float on the surface and be skimmed off. After being repeatedly stirred and cleaned of light grains, let it remain in the liquor from four to six hours—but may remain twelve hours, or, longer, without injury. It is, then, to be taken out, drained and rolled in plaster; or, if that is not at hand, may be spread upon a floor, and, with occasional stirring, dried sufficiently for sowing. A second five bushels may then be put in the liquor, (to which as much water should be previously added as will supply the loss of quantity, or volume, occasioned by absorption of the first parcel,) proceeding in the same manner as at first; and after it a third, but somewhat less quantity may follow. It is not deemed advisable to reduce the strength of the solution too much, and it is important that the liquor should rise at least half an inch above the surface of the wheat, when first put in, as the swelling of the grain will, in a few hours, raise it to the surface. Before a fourth parcel of wheat is put in, an additional portion of the vitriol—dissolved as before directed—at the rate of a pound of vitriol for every three bushels of wheat must be given, with the necessary quantity of cold water; and so proceed until the liquor becomes foul or turbid, when a fresh preparation must be made.

The foregoing I consider the most convenient, and I have, in repeated trials, found it to be the most *certain* of all the remedies for smut I have ever tried or heard suggested. It is also a cheap remedy. The blue vitriol can be bought, for agricultural purposes, in quantities of twenty-five pounds, at ten cents per pound. I know at least that Messrs. Adie & Gray and Mr. R. R. Duval of Richmond, will furnish it at that price. The cost, therefore, will be less than four cents per bushel; but if those who may give it a *fair* trial do not find in an increased vigor of growth and product of healthy grain more than double compensation for all the cost and labor of the preparation, their experience will greatly differ with mine.

Respectfully,

Your most obedient servant,

JOHN P. WILSON.

Cumberland, Aug. 24, 1852.

THREE RECIPES FOR THE LADIES.

We are sometimes asked why we do not put more things for the ladies' benefit in the Planter. We always reply, and with truth, that we have no room. But we shall take room now to tell the ladies how to make good loaf bread, how to make good soap, and how to make a washing mixture that will save a great deal of labor and trouble, and that is sometimes sold as a secret at something like a dollar to each family.

TO MAKE LOAF BREAD.

Take yeast made in the following manner: 1st. Boil a handful of hops and two large potatoes in a quart of water for thirty minutes. Then strain off the water, thicken it with two table-spoonfuls of flour and boil it a little. 2d. Put one quart of potatoes to boil; when done and whilst they are still hot mash up with them half a pound of flour. Then add half a gallon of water and a pint of *hop yeast*. Stir them well together and set the mixture to rise. This makes the yeast.

For two quarts of flour take one tea-cup full of this yeast, one table-spoonful of salt, and as much water as will make it stiff, work it well and set it away to rise. In the morning work it over, make it out into rolls or loaves and let it rise again one hour. Then bake it as long.

This is the recipe which we obtained from the cook at the Exchange Hotel, and we have had good bread ever since without exception. Those who practise upon it will assuredly have good bread *if they have good flour*, and may thank our friend Ballard for the luxury. Better bread than he has we care not to see.

But we do not guarantee that this bread, or any other cooked in the usual way, shall be healthy. To obtain that desideratum, bake the bread over again the next day. It will then be dry and wholesome, so says the best physician we know. Some persons object to the flavor of bread thus baked a second time. They had better get used to it. They can never get used to dyspepsia.

TO MAKE SOAP.

Take lye strong enough to bear an egg, measure it into tubs or barrels, and to each gallon of the above strength put one pound of grease. Stir it every day until it thickens—then to sixteen gallons of this mixture add four gallons of lye as strong as the first. Boil until the grease entirely disappears, which it will generally do in one hour. If you wish to make hard soap, dissolve six quarts of salt in four gallons of water, add it to the soft soap, stirring it in well and boil fifteen minutes longer. Pour out into tubs and cut it out when it is cold.

This is a recipe of two generations of notable housewives. We have tried it successfully for some four or five years.

TO MAKE A LABOR-SAVING WASHING MIXTURE.

Take twenty pounds of soap melted in one gallon of lye: let it cool a little, and stir in one quart of spirits of turpentine, one pint of hartshorn and four ounces of pearlash. Put it in a stone pot, and tie up tightly.

Put one pound of this mixture to twelve gallons of water. When it is dissolved put in as many clothes as the water will *well* cover, which will be about five or six dozen; let them stand half an hour; then press, *not wring*, them out and put them in boiling water to boil. Boil the usual time and throw them into cold water, rub them out, (the most soiled will require a little soap, but many pieces will not need a particle,) rinse them, pass them through blueing or starch water and hang them out. It is all the better to let them soak the previous night.

The water that the clothes are soaked in will do to work the colored clothes if they are not very dirty. These last should stand about twenty minutes.

Flannels after soaking in the mixture should be washed in clear hot water and hung out.

We can testify of the above, after having tried it some three years, that it is very valuable, saving at least one-third of the time of washing, and being also a saving of soap. It never hurts the clothes.

Here, then, are three recipes, each valuable of its kind and each vouched by us after a satisfactory, and in two instances, a long continued trial. We hope others will be as much pleased with them as we have been.

SOUTHERN FRUITS.

Our thanks are due to Mr. Henry R. Robey of Fredericksburg, for some apples and pears from his nurseries near that town. We do not know all the varieties he sent us—but they were of delicious flavor and very fine, particularly the "Golden Pippin" and "Cathead." See his advertisement in another column.

BULL FOR SALE.

The bull advertised for sale in another part of our paper belongs to Mr. Charles Yates of Jefferson, and was raised by Mr. Ro. W. Baylor of the same county. He is of the stock of Mr. Shepherd of Shepherdstown, on the dam's side, perhaps on the sire's also—*he* was an imported Ayrshire—and that should be, to those who have heard of Mr. Shepherd, a guarantee of the purity of the breed. We have heard this of him on what we deem good authority, that he imports and owns the best bred stock in Virginia. The bull is sold for no fault whatever, but only because his owner has enough of his progeny, and must move him out of their way. Some of his calves are now at the pail, and Mr. Baylor, who owns them, says in a certificate before us that "they are very superior milkers." Should the purchaser desire it, he can also get of Mr. Yates one or two other animals of good blood to drive with the bull. He is also broke to work, and is, in our opinion, all the better for that. We are thus particular in calling attention to this animal, because he is a *Virginian*, and so are we. We go for the home made article to the exclusion of the Northern ALWAYS, when the article is as good an one, and will freely *give* the space necessary to let people know that they can be supplied at home as well as abroad.

ERRATUM.

In the communication of "Anon," on "the Hessian Fly—the Black Fly—and the Joint Worm," published in our September number, there occurred an error in punctuation which made the author express directly the reverse of what he intended. Page 283, second column, 15th and 16th lines, should read, instead of as printed, thus: "Supposing it could only be recognized by the bent joints, when the wheat was heading. Upon examination," &c.

USE OF BLUE VITRIOL TO DESTROY SMUT IN WHEAT.

The following letter we promised to publish as soon as received. It is very satisfactory, and we hope not too late for the use of some of our friends.

NEWBERRY COURT HOUSE, S. C.,
17th August, 1852.

F. G. Ruffin, Esq.—Sir: Your favor of the 21st ult. has been received, asking information relative to the mode of using blue vitriol as a remedy for smut in wheat. It is very simple, and at the same time very effectual, as the experience of *every* farmer, in this section, goes to prove, from a use and test of at least twelve or fifteen years. The following is the mode and manner in which it is used and applied with us.

Dissolve in water, suffieient to cover or swim the wheat well, 1 pound blue vitriol for every four (some farmers add five) bushels seed wheat; let the wheat remain in this soak eighteen to twenty hours; take out and sow immediately, or before

the wheat becomes too much swollen, and you may rest assured there will not be one head of smut in the crop grown from seed soaked in this way, however much the crop may have suffered from which the seed was taken.

Some of the farmers are of opinion this soak will effectually eradicate chess and cockle. But of this I am not so sure. That it is an effectual remedy against smut, if properly applied, there is not the shadow of a doubt. The wheat may be put in the soak at the same time as the blue stone, or allow the blue stone to dissolve, and then apply it.

Very respectfully yours,

R. STEWART.

For the Southern Planter.

WORN LANDS.

Mr. Editor,—It being a very rainy day, with some leisure and feeling interested in the success of your invaluable paper, devoted to agriculture, horticulture and the household arts, I have concluded to converse a little with you and your readers.

I have for the last two months been actively engaged in attention to the sick of my family. The typhoid fever in a very malignant form has been very fatal, and my loss of hands from death and sickness have been such as greatly to retard my plantation operations this year.

My place had been proverbially healthy for the last thirty-five years. The typhoid is now prevailing in the highest localities in our vicinity, or I should attribute it to the situation of my settlement very near a stream which has overflowed my flat lands several times since the first of April, but I have consulted with physicians of eminence and they inform me that the highest mountains and most elevated ridges are not exempt, and that the locality is unimportant. My family physician, Dr. J. H. Lacy, has often said that no family in his practice have enjoyed such health as ours, considering the number.

I am of opinion that one case of typhoid fever, whether contracted at home or abroad, from any cause in a family, is sufficient cause to communicate it to the nurses and persons attending. The room of the patient is infected, and all immediately exposed are more liable to take the disease than persons in an adjacent room under the same roof. This has been the case in my family—all escaping in the adjacent room—but the disease is still progressing in milder form, and we cannot foreshow the result.

This, however, is a digression (which you will excuse) from the object of this communication. I believe there is such a thing as being too slow, too deliberate in agriculture, too *slow*, too *deliberate* in all the departments of business—a deliberation much to the annoyance of business men in public bodies, in our Congress and Legislatures, for instance, and in a ten-fold degree to the great constituency of the country, who tamely submit to such abuse of themselves and wilful waste of time. I have observed the slow progress of business in our county courts, more time often occupied in frivolous suits, in the extended examination of witnesses, knowing nothing material, followed with provokingly long speeches from counsel more fully to elucidate the case, already made plain by testimony, when the whole matters in controversy would not pay a very small per diem allowance to the court and jurors necessarily engaged in the case. I once asked an intelligent lawyer the cause of so much time being consumed in court now-a-days. His reply was, that it was the progress of civilization thoroughly to investigate all cases between man and man with a view to full justice. A very good answer, and perhaps the best excuse that could be given for that tardiness and delay which, in my opinion, has done more injury to suitors than the loss of the money in controversy. Thus at an early period I adopted this maxim, *speedy settlement of all controversies* (*right* or *wrong*) at law.

Mr. Editor, agriculture has suffered much from this cause. The farmers and planters called to court at the business seasons of the year, to the neglect of operations all-important to success; sometimes at great expense and distance from home, when, as witnesses they know *nothing material.* I shall not pursue this train of remark farther than to express the wish that our new Constitution may be the means of expediting justice and prove a *panacea* for all complaints under the old, *now dead, Constitution.*

Many years since, as my friend Edmund Ruffin's Register will show, I was the author of a communication on *Worn Lands*, to which I shall now briefly advert; and I do so because in this day of new things under the sun many old things, in themselves *useful, are forgotten.* I asserted in that communication "that the planters and farmers of Virginia had ample means of improving their worn land on their own farms. The corn-stalks from flat lands, the wheat-straw and rich earth from the corners of fences, with the application of surface manure on lots in grass—that oak and pine-leaves had been successfully used years ago—that the Rev. James Brooks of Charlotte, who was a large tobacco maker, manured his lots mostly with oak-leaves, putting them very thick over the land—that pine-leaves I had seen used as a cover for Irish potatoes with great success on an exhausted piece of land (at Mr. Richard N. Venable's, Prince Edward,) producing the cleanest and nicest potatoes I ever saw, and I may have omitted to state

that with his walking stick he made holes and dropped grains of corn, which yielded large stalks and good ears (being thinly planted) without any hoe work whatever, save the preparation for planting. Before that communication but little use had been made of pine-leaves in our section as an improver; since which time I understand great use has been made of them, both in lower Virginia (and in my own vicinity on tobacco lots.) The tobacco grown from such lots is of the finest texture. The suggestion was of great benefit, I learn, which is truly gratifying to me. "That we had evidence enough of the value of surface manuring on the yards of old settlements and stacking places," hints of value to the young agriculturist of the present day, however much he may be versed in the science of agricultural chemistry and the use of foreign manures.

I know it is useless to debate the question of raising all the manure we conveniently can at home. Every man must see in the present condition of our lands they need all home resources, combined with the use of foreign, to restore the worn lands of Virginia to virgin fertility. We have in this old commonwealth vast scenes for improvement and every opportunity to make manure *tell*. We have yet, compared with Europe, comparatively a forest country to improve, and here the question arises, whether half the lands in Virginia are not at this time covered with some growth not the original, for much of it was prairie when settled by our progenitors. The plantation on which I now reside was patented to my grandfather, Joseph Morton, Jr. in the years 1742, 1746, 1756, and was mostly covered with under growth, and in many places the grass reached the saddle skirts as he explored the country of Little Roanoke and the Staunton.

I had the pleasure, at the last Charlotte court, of hearing President Smith in an able and lucid address on the subject of agricultural chemistry. He proposes to establish at Randolph Macon, in Mecklenburg, Va. a laboratory, with a view to analyze the soil of the adjacent country. He urged with much force the advantages of such an institution and the knowledge of what our lands needed, the proper application of manures, only to be ascertained by chemical analysis—that this information was important and indispensable to the successful culture of the earth. I am gratified to say he was well received, and his scheme, although new to us, was patronized with spirit by the farmers of the county, and particularly by the young men, who have some chemical knowledge. I hope his mission will be crowned with success in this, the first effort of the kind in our section of the State.

I acknowledge that I am behind the age in the use of foreign manures, and behind the age in raising or making summer manure except from stables and cow-pens; yet I am still determined to move on *pari passu* in the improvement of worn lands. I have done something in giving a better face to such lands on my farm. *Perseverance accomplishes much*, and although the progress is slow in land improvement, it is sure. I shall not extend this communication farther in reference to my success in cropping or the improvement of lands.

Some years since, during a very wet season when the corn wanted work, the most prudent waited for dry weather to plough; the consequence was a general failure in the neighborhood. Maj. Samuel F. Spencer, my nearest neighbor, one of the most energetic and successful planters I ever knew, ploughed his fields wet, and succeeded in a fine corn crop that year, running against the current opinion of working lands when wet. Prompt movement in cultivation is indispensable as well as in military manœuvre, so fully illustrated by the early successes of Napoleon Bonaparte. *Plough deep* in the preparation for a crop, and then light cultivation will do. My relative, Jacob Morton, has succeeded well for several years in cultivating his corn crop mainly with seven-tooth harrows, drawn by two horses, with very little hoe work. He has this year a most luxuriant crop, cultivated with very light labor. My friend and county-man, Capt. John Marshall, has, I understand, the finest corn crop on high land perhaps ever seen in the county. He also cultivated with harrows, with some use of guano, and I hope both gentlemen will communicate to your paper, and give the result of their mode of cultivation. I have used harrows with great advantage in my tobacco crop this season, being scarce of labor, from sickness. My corn land was not prepared with a view to rely on harrows. Had I known as much of their utility I could have cultivated the largest corn crop I have ever had with half the labor. I am of opinion hoe work may be dispensed with almost entirely, provided we find an implement so constructed as to give much or little dirt to corn in different stages. Possibly a wing coulter, which I have never tried, will answer. The harrow used by J. M. comes very near doing the thing by taking out the front tooth in the angle and running over the corn. Mr. Robert Nelson some years since at the Buffalo Springs, in Mecklenburg, informed me that he made with little or no hoe work one hundred and fifty barrels of corn with one horse and ploughman, I suppose the Dagon. Our lands improved to the highest state, with the labor-saving machines of the present day, and great will be the product of this good Old Dominion of ours.

SAMUEL D. MORTON.

Roanoke Bridge, Aug. 6, 1852.

A ten-acre field, costing fifty dollars per acre, and ditched, manured and improved, at fifty dollars more, so as to give double crops, is much more valuable and profitable than twenty acres unimproved, costing the same money.

From the Boston Cultivator.

A HOLSTEIN DAIRY.

Captain Stanley Carr, who kept a dairy of one hundred and eighty cows, in Holstein, stated that he used glass milk-pans. They were purchased at the manufactories at six pence sterling, each. Their advantages over wood were, that while the latter had to be boiled thoroughly to cleanse them and remove the acidulated matter from every crevice, the glass pans were at once rendered sweet and clean by simply washing with a sponge. They were not liable to break. At first, he allowed a sum of money to his dairy-woman to cover breakage; but it was found by experience, that in a dairy of one hundred and eighty cows, the actual loss by breakage never exceeded three shillings six pence, annually. He stated that the great objects of the German dairy management were to prevent the milk turning sour, to maintain throughout the milk-cellar an equable temperature of sixty degrees Fahrenheit, to place the milkpans on the floor, to allow the continuous ascent of the air from the floor to the ceiling, and out of the upper windows, and keep the milk as long as possible in the pans before skimming. It was found that the last object was more effectually attained in the glass milkpans than in any others; and it was supposed that the perfect state of insulation in which the milk was placed by so perfect a non-conductor as glass, prevented the passage of atmospheric electricity through it, and the production of that acid matter which so constantly resulted under ordinary circumstances, on changes of temperature and during thunder-storms. Colonel Challoner had been informed that the depth of the milk in the pan ought to be less in proportion to its richness in cream. Capt. Carr had found as the result of thirteen years' experience, that not more than four or five quarts of ordinary milk ought to be put into a glass circular pan, such as the one then before the Council, sixteen inches in diameter at the top, and twelve at the bottom. Lord Berners inquired how often the milk was skimmed in Germany, and how long it remained before skimming. Captain Carr replied, that they never skimmed the same milk but once, and then not until it had stood at least thirty-six hours; but the longer it could be kept before skimming, at sixty degrees Fahrenheit, without becoming sour, the greater in proportion, to a certain extent, was the amount of cream obtained. Mr. Law Hodges wished to know whether glazed earthenware pans would not equally answer the purpose as glass ones. Captain Carr remarked that in Germany they also employed glazed vessels and iron. The earthenware, however, being often badly baked, was on that account more fragile than glass, besides being more easily soiled and less easily cleaned; it was also at the same time a less perfect non-conductor of electricity.

Professor Way quite agreed with Captain Carr's ingenious theory of the electrical insulation of milk in the glass pans. The milk in them would not turn sour so soon as it would in metal vessels. We did not, he thought, well understand the mode of action of electricity on liquids. When electricity passed through the air to the earth, the freer the passage, the more harmless it was. He was disposed to attribute the influence of electricity on liquids to chemical changes occasioned by electricity in the air itself, as in the well known case of nitric acid, in small quantities, being produced in the atmosphere during thunder storms, when such acidulation would at once act determinately on delicately poised constituents, like those of milk, especially after that increased sultry temperature which usually precedes such a disturbance of the electrical equilibrium of the air. He quite agreed, too, with Captain Carr, that milk should be kept cool, and its temperature equable. Metallic vessels would in this point of view be far more liable than glass ones to communicate to milk those changes of temperature which take place in the surrounding atmosphere. Glass, under all circumstances, would have advantages that earthenware had not, unless when very well glazed.

Captain Carr remarked, that his dairy was half under ground, being required to be dry, but not damp; that it was always kept at sixty degrees of temperature, and its floor supplied with the little channels of water. The dairy ought to be free from the very semblance of dirt; the brick floor should be cemented and hard—the walls smooth and whitewashed, and both wood and stone free from hanging dust of any kind—the air should circulate freely, and there should be no dampness in the rooms—the pans should be placed low down on the floor, otherwise the milk would not yield the full quantity of cream, and the vapor rising from the milk, should have an

opportunity of passing off unobstructedly from the upper part of the dairy—there should be no taint or bad smells—the aspect should be to the north—and the roof should be penthouse. Along the floor should be passages, on which the dairy-woman could walk in wooden slippers. In Holland, no milk was placed in pans on shelves, but always on the floor, as in Holstein. He could assure the Council that in those parts of the Continent where the dairies were managed in the scrupulous manner he had described, the object was simply *profit;* and the means thus taken to secure that end were those best adapted for the purpose, however they might have the appearance in detail of being employed on grounds only of elegance, taste, or even cleanliness.

GROUND PLASTER AND BONE DUST.

We invite the attention of our readers to the advertisement of Mr. R. R. Duval. He has erected a Plaster and Bone Mill in this City, which we have seen in operation, and were much pleased with the fine quality of his bone dust. To farmers who know the importance of having these articles pure, we do most cordially recommend him, with the assurance that he will give entire satisfaction to all who may patronize his establishment.

P. D. E.

PAYMENTS TO THE SOUTHERN PLANTER,

From August 23d to October 6th, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

George Williams, to July, 1853,	$1 00
Dr. R. Wood, to January, 1853,	1 00
T. S. Morton & Co. to July, 1853,	1 00
George W. Old, to July, 1853,	1 00
Thomas Keith, to July, 1853,	1 00
James P. Hambleton, to Jan. 1853,	0 50
Abram C. Carrington, to July, 1853,	1 00
William M'Nish, to July, 1853,	1 00
P. L. Derby, to July, 1853,	1 00
G. R. Rogers, to July, 1853,	1 00
George Whitmore, to July, 1853,	1 00
Dr. F. W. Power, to July, 1853,	1 00
James M. Carter, to July, 1853,	1 00
George Bouton, to July, 1853,	$1 00
Warner Wood, to July, 1853,	4 00
Hampton Bynum, to January, 1853,	2 00
W. B. M'Chesney, to July, 1853,	1 00
Adam M'Chesney, to July, 1853,	1 00
J. M. Fray, to July, 1853,	1 00
J. M. Carpenter, to July, 1853,	1 00
James W. Binford, to January, 1853,	2 00
Charles P. Chilton, to July, 1853,	1 00
Roger Hickman, to January, 1853,	7 00
Richard Bagby, to January, 1854,	1 00
H. C. Haislip, to May, 1853,	1 00
Logan Osburn, to July, 1853,	1 00
G. H. Tate, to July, 1853,	1 00
George W. Peter, to July, 1853,	1 00
Charles H. Lewis, to July, 1853,	1 00
James V. Moore, to July, 1853,	1 00
William G. Ferguson, to July, 1853,	1 00
S. D. Briarly, to July, 1853,	1 00
James L. Hooff, to July, 1853,	1 00
Charles Yates, to July, 1853,	1 00
A. S. Dandridge, to July, 1853,	1 00
John M. Engle, to July, 1853,	1 00
Paul Smith, to July, 1853,	1 00
Amos Shepherd, to July, 1853,	1 00
John M. M'Farland, to July, 1853,	1 00
William A. Castleman, to July, 1853,	1 00
Robert M. English, to July, 1853,	1 00
Col. Francis Yates, to July, 1853,	1 00
N. S. White, to July, 1853,	1 00
Joseph Crane, to July, 1853,	1 00
Dr. L. S. Eichelberger, to July, 1853,	1 00
William L. Baker, to July, 1853,	1 00
Thomas Rawlins, to July, 1853,	1 00
William West, to July, 1853,	1 00
Joseph Starry, to July, 1853,	1 00
Robert Lucas, Jr. to July, 1853,	1 00
C. G. Bragg, to July, 1853,	1 00
Thomas B. Washington, to July, 1853,	1 00
William Benton, to July, 1853,	1 00
H. A. Ball, to July, 1853,	1 00
John Janney, to July, 1853,	1 00
A. S. Tebbs, to July, 1853,	1 00
William H. Gray, to July, 1853,	1 00
S. W. M'Carthy, to July, 1853,	1 00
R. L. Wright, to July, 1853,	1 00
J. B. Beverly, to July, 1853,	1 00
John Hoffman, to July, 1853,	1 00
Thomas Rogers, to July, 1853,	1 00
William Williams, to July, 1853,	1 00
William Rogers, to July, 1853,	1 00
Joshua White, to July, 1853,	1 00
Albert J. Best, to July, 1853,	1 00
Joseph Mead, to July, 1853,	1 00
Dr. George Lee, to July, 1853,	1 00
John Jones, to July, 1853,	1 00
Gen. George Rust, to July, 1853,	1 00
Thomas Nichols, to July, 1853,	1 00
Dr. Daniel Janney, to July, 1853,	1 00
Joshua Pusey, to July, 1853,	1 00
Griffith W. Paxson, to July, 1853,	1 00
Joshua Nichols, to July, 1853,	1 00
Heston Hurst, to July, 1853,	1 00
Dr. Thomas Claggett, to July, 1853,	1 00
Isaac G. Nichols, to July, 1853,	1 00
Isaac Vandeventer, to July, 1853,	1 00
A. T. M. Rust, to July, 1853,	1 00

Owen Thomas, to July, 1853, $1 00
William H. Rogers, to July, 1853, 1 00
Thomas W. Edwards, to July, 1853, 1 00
Robert G. Davidson, to July, 1853 1 00
Charles Williams, to July, 1853, 1 00
William Fulton, to July, 1853, 1 00
Yardley Taylor, to July, 1853, 1 00
Noble S. Braden, to July, 1853, 1 00
John George, Jr., to July, 1853, 1 00
William P. Swann, to July, 1853, 1 00
Francis M. Carter, to July, 1853, 1 00
R. A. Ish, to July, 1853, 1 00
French Simpson, to July, 1853, 1 00
Rev. George Adie, to July, 1853, 1 00
A. M. Vandeventer, to July, 1853, 1 00
James D. Simmons, to July, 1853, 1 00
W. H. Cassaday, to July, 1853, 1 00
William Hall, to July, 1853, 1 00
Joseph Hiden, to July, 1853, 1 00
Anthony Foster, to October, 1853, 1 00
John G. Powell, to July, 1854, 1 00
Roger Chew, to October, 1855, 2 00
R. W. Baylor, to September, 1853, 1 00
John R. C. Taylor, to July, 1853, 1 00
H. L. Opie, to September, 1853, 1 00
William Lucas, to July, 1853, 2 00
R. W. Brooking, to January, 1853, 1 00
H. M. Smith, to July, 1853, 1 00
Benjamin R. Lacy, to January, 1853, 1 25
James A. Walker, to July, 1853, 1 00
James Hiter, to July, 1853, 1 00
Ronald Mills, to January, 1853, 1 00
I. B. Walton, to July, 1853, 4 00
William Snoddy, to January, 1853, 4 00
Wilmur A. Jones, to July, 1853, 1 00
Dr. William Martin, to January, 1853, 2 00
Robert S. Bailey, to September, 1852, 1 25
William H. Clore, to July, 1853, 1 00
T. W. Chapman, to July, 1853, 1 00
M. C. O'Briant, to September, 1852, 1 25
N. W. Miller, to January, 1853, 2 00
Dr. John Morriss, to January, 1853, 6 00
Thomas N. Green, to October, 1853, 0 50
James E. Wills, to September, 1853, 1 00
T. R. Dew, to January, 1853, 1 00
William Long, to January, 1853, 1 00
I. H. Perkins, to September, 1853, 1 00
G. A. Chaffin, to July, 1853, 1 00
J. E. Smith, to July, 1853, 1 00
Maj. Boyle H. Barnes, to July, 1853, 1 00
Robert W. Morris, to September, 1853, 1 00
J. R. Bryan, to January, 1854, 1 00
William Gouldin, to July, 1853, 1 00
Harrison Jones, to January, 1853, 6 00
Dr. L. L. Holladay, to July, 1853, 1 00
T. M. B. Roy, to January, 1853, 2 00
Charles T. Graves, to September, 1853, 1 00
Frank: Slaughter, to July, 1853, 1 00
Thomas L. Preston, to July, 1853, 1 00
Robert A. Munday, to January, 1854, 2 00
Elisha Barksdale, to July, 1853, 1 00
Isaac G. Cason, to July, 1853, 1 00
Spencer Coleman, to July, 1853, 1 00
A. S. Allen, to July, 1853, 1 00
Robert Beverley, to July, 1853, 1 00
Joseph J. Gregg, to July, 1853, 1 00
Richard H. Foote, to July, 1853, 1 00
H. W. Ashton, to July, 1853, $1 00
S. A. Buckner, to July, 1853, 1 00
S. B. Hunton, to July, 1853, 1 00
E. F. Rose, to July, 1853, 1 00
W. E. Franklin, to July, 1853, 1 00
J. M. Fant, to July, 1853, 1 00
Lewis Ellis, to July, 1853, 1 00
William M'Coy, to July, 1853, 1 00
James Barbour, to July, 1853, 1 00
H. F. Yager, to July, 1853,
W. F. Nicol, to July, 1853,
Franklin Jarrell, to July, 1853, 5 00
Sim: Weaver, to July, 1853,
Henry Carpenter, to July, 1853,
Jared Garr, to July, 1853,
Samuel Gibbons, to July, 1853, 1 00
A. S. Modesitt, to July, 1853, 1 00
A. H. Carpenter, to July, 1853, 1 00
John S. Kemper, to July, 1853, 1 00
Josh. Miller, to July, 1853, 1 00
John V. Kean, to July, 1853, 1 00
Alexander R. Givens, to July, 1853, 1 00
Dr. William A. Hill, to June, 1853, 1 00
Dr. James A. Reid, to July, 1853, 1 00
Zach. Drummond, to January, 1853, 1 00
Capt. H. E. Scott, to January, 1854, 2 00
A. B. Anderson, to September, 1853, 1 00
Jas. M. Anderson, to September, 1853, 1 00
A. L. Stringer, to July, 1853, 1 00
G. W. Pettit, to September, 1853, 1 00
G. W. Shirley, to October, 1852, 1 00
John White, to July, 1853, 1 00
T. R. Maupin, to September, 1853, 1 00
J. H. Burnley, to July, 1853, 1 00
Fontaine Wells, to July, 1853, 1 00
James E. Chapman, to July, 1853, 1 00
P. H. Goodloe, to July, 1853, 1 00
P. E. Bacon, to July, 1853, 1 00
John H. Coleman, to July, 1853, 2 00
George W. Macon, to July, 1853, 1 00
Shepherd Moore, to July, 1853, 1 00
W. W. Tompkins, to July, 1853, 1 00
W. R. Harris, to September, 1853, 1 00
S. G. White, to July, 1851, 3 00
B. C. Watkins, to September, 1853, 1 00
Augustus Hancock, to August, 1853, 1 00
Thos. L. Hobson, to September, 1853, 1 00
J. B. Bragg, to September, 1853, 1 00
Dr. A. S. Hall, to January, 1853, 5 00
William R. Smith, to January, 1853, 5 00
William Hunley, to September, 1853, 1 00
George P. Fitchett, to January, 1854, 3 00
James Lyons, to July, 1853, 2 00
George Stillman, to September, 1853, 1 00
W. W. Garrett, to January, 1853, 1 00
C. Turner, to January, 1853, 2 50
J. S. Quesenberry, to January, 1853, 1 00
Wyatt H. Pettus, to July, 1853, 0 77
James G. Beverley, to September, 1853, 1 00
F. W. Battaille, to January, 1853, 4 00
Dr. W. J. Michie, to January, 1854, 1 00
L. W. Cabell, to January, 1854, 1 00
L. Muse, to September, 1853, 1 00
R. O. Shirley, to May, 1853, 1 00
A. B. Crowder, to September, 1853, 1 00
R. Boyd, to September, 1853, 1 00
John Patillo, to September, 1853, 1 00

Waller Taylor, to September, 1853,	$1 00
Wm. Haskins, to September, 1853,	1 00
Nathaniel Morton, (in full,)	3 00
George W. Turner, to September, 1853,	1 00
Dr. J. G. Brown, to September, 1852,	1 00
William Meredith, to January, 1854,	1 00
F. P. Spotts, to September, 1853,	1 00
H. P. Poindexter, to July, 1853,	1 00
T. W. Morton, to September, 1853,	1 00
Dr. W. S. Boyce, to July, 1853,	2 00
W. W. Hill, to January, 1853,	1 00
D. C. Randolph, to May, 1853,	1 00
Thomas Bailey, to January, 1854,	2 00
A. H. Hankins, to September, 1853,	1 00
George Hankins, to September, 1853,	1 00
Dr. E. A. Coleman, to September, 1853,	1 00
W. N. Ragland, to January, 1854,	7 00
Col. Thomas Pugh, to January, 1853,	1 00
A. Bailey, Jr., to January, 1853,	1 00
C. A. Anderson, to January, 1853,	1 00
Robert Graham, to May, 1853,	1 00
John T. Cundliffe, to May, 1853,	1 00
B. F. Lewis, to May, 1853,	1 00
J. H. Eustace & Son, to Sep. 1853,	1 00
D. R. Goodman, to September, 1853,	1 00
William G. Fretwell, to July, 1853,	1 00
R. G. Crank, to July, 1853,	1 00
William Overton, to January, 1853,	4 00
William W. Gilmer, to January, 1853,	1 00
Isaac L. Cary, to September, 1853,	1 00
D. J. Hartsook, to September, 1853,	1 00
W. G. Morton, to January, 1854,	7 00
William Hatch, to January, 1854,	2 00
W. C. Scott, to July, 1855,	3 00
George L. Kerfoot, to January, 1852,	1 00
John Alexander, to January, 1853,	1 00
Joseph Wooling, to September, 1853,	2 00
A. H. Jones, to October, 1853,	1 00
Anderson Wade, to January, 1853,	1 00
F. P. Holcomb, to September, 1853,	1 00
Elliott Wortham, to January, 1853,	3 00
G. F. H. Harrison, to July, 1853,	1 00
Samuel H. Hairston, to January, 1853,	1 00

SOUTHERN FRUITS.

HOPEWELL NURSERIES, Fredericksburg, Virginia.—The Proprietor offers for sale a large stock of Fruit and Ornamental Trees, Evergreens, Roses, &c. Having witnessed the evil of circulating numerous Northern Fruits, without proper regard to proving their quality and adaptation to a Southern climate, the proprietor has looked more to the South for his Winter Apples, and has introduced many superior varieties, perfectly adapted to our long hot summers; and keeping late in the Spring.

Also a large stock of Pears, Cherries, Peaches, Plums, Apricots, Grapes, Strawberries and other Fruits—a fine stock of Roses and other Flowers. His prices are low. For particulars see Catalogue, which will be sent to all post-paid applicants. Trees packed in the best manner, and shipped according to orders to any part of the United States.

oc—2t* HENRY R. ROBEY.

NEW PLASTER AND BONE MILL.

THE subscriber offers for sale fine Ground and Calcined Plaster, both of the best and purest quality; he has also a Bone Mill attached, and intends to keep a supply of Ground Bones, fine and pure. Farmers and others are invited to call and examine for themselves. His prices shall be as low as the same quality articles can be bought for, North or South. The highest cash price will be paid for dry bones, delivered at his Mill adjoining the Paper Mill.

oc—tf R. R. DUVAL.

DR. VALENTINE'S RECIPE FOR MAKING ARTIFICIAL GUANO.

No. 1. Dry Peat,* - -	20 bushels
No. 2. Wood Ashes, - -	3 bushels
No. 3. Fine Bone Dust, - -	3 bushels
No. 4. Calcined Plaster, -	3 bushels
No. 5. Nitrate of Soda, - -	40 pounds
No. 6. Sal Ammoniac, - -	22 pounds
No. 7. Carb Ammonia, - -	11 pounds
No. 8. Sulph: Sodæ, - -	20 pounds
No. 9. Sulph: Magnesia, -	10 pounds
" 10. Common Salt, - -	10 pounds

* If peat cannot be obtained, use garden mould, or clean virgin soil instead.

DIRECTIONS FOR MIXING.—Mix Nos. 1, 2, 3, together—mix Nos. 5, 6, 7, 8, 9, 10, in four or five pails of water, or enough to dissolve the ingredients. When dissolved, add the liquid to the mixture, (1, 2, 3,) and mix as in making mortar. When thoroughly mixed, add No. 4, (the calcined plaster,) which will absorb the liquid and bring the whole to a dry state. Mix under cover in a dry place—pack so as to exclude air—observe the proportions in making small or large quantities. The above receipt will make one ton, which will manure seven and a half acres of land.

Having furnished the above to a number of farmers who have tested its qualities—many thinking it equal to natural guano—the subscribers have made arrangements to furnish any quantity during this season, and will sell the ingredients exclusive of the Peat, Wood Ashes, Plaster and Salt, (articles on every farm,) at the low price of $10 per ton. One sugar hogshead will hold ingredients enough for five tons. All orders will be carefully and promptly executed, and sent to any part of the State.

R. R. DUVAL & BRO.

Chemists and Druggists, under the American Hotel, Richmond, Va. oc—tf

FOR SALE.—A thoroughbred Bull of the Ayrshire and Durham breed, in fine health and vigor—color rich red, with slight white spots in the flank, characteristic of the Ayrshire breed. Said Bull is immediately descended on both sides from Imported Stock. For testimonials of stock, &c, enquire of the Editor. oc—tf

DAILY AND WEEKLY DISPATCH.

THE Daily and Weekly Dispatch, published at the office on Governor street, near Main, Richmond, Virginia—commenced in October, 1850—have reached a very astonishing popularity. The DAILY DISPATCH is a penny paper and has an immense circulation in Richmond and contiguous towns. It affords the best medium for advertising. Subscribers in the country furnished with the paper at the low price of Four Dollars per annum.

The WEEKLY DISPATCH is published at ONE DOLLAR PER ANNUM, and is therefore one of the cheapest Newspapers ever published. It is a handsome sheet and contains the News of the Day, together with Literary Selections from the very best sources. The list is already very large and constantly increasing. No paper will be sent until paid for in advance. HUGH R. PLEASANTS is the chief contributor to the editorial columns of the Daily and Weekly Dispatch. Address the Proprietor, Richmond, Virginia.

DeBow's Industrial Resources

AND PROGRESS OF THE SOUTHERN AND WESTERN STATES, in three large and closely printed volumes, small type, double columns; handsome print, paper and binding,—being a digest and abridgement of the 12 volumes of DeBow's Review. Price $10, or $3.33 per volume.

Desirous of supplying the large and continually increasing demand for the *complete series of the Review*, in 12 volumes, now exhausted, and which it would require a very large outlay to reprint, the editor has been induced to make a selection of all the important and valuable papers contained in them from the beginning, condensing, re-arranging and completing to date, and throwing the subjects after the manner of the encyclopœdias, into alphabetical order. In this manner everything of interest and importance will be preserved in a *convenient form for reference;* and the volumes will constitute the only repository for the shelves of the library, of such information, which by means of the monthly numbers hereafter will always be brought down to date.

The Volumes will embrace the gist of everything that has appeared in the Review relating to the *Southern and Western States.* (An imperfect index of which will be found at the opening of the 10th volume.)

To wit: Their HISTORY, POPULATION, GEOGRAPHY, STATISTICS; AGRICULTURAL PRODUCTS, of COTTON, SUGAR, TOBACCO, HEMP, GRAINS, NAVAL STORES, etc. etc.—MANUFACTURES; detailed accounts, statistics and history of all branches,—INTERNAL IMPROVEMENTS; complete statistics of RAIL ROADS, results profits, expenses, costs, advantages, miles in projection, construction, completed, etc.; Plank Roads, Canals, Navigation, etc.—*Statistics of Health and Diseases, wealth and progress; relative condition, white and black;* SLAVE LAWS and STATISTICS, *management and amelioration of slavery,—origin, history and defences of slavery and slave institutions;* the valuable treatises of HARPER, HAMMOND, DEW, on slavery, etc.; COMMERCE OF THE SOUTH AND WEST in all of its minute particulars, etc. together with an historical and statistical sketch of *each of the states and cities,*—the *domestic and foreign trade, resources, manufactures, etc. of the United States;* the CENSUS RETURNS from 1790, with the COMPLETE STATISTICS OF THE CENSUS OF 1850.

The volumes will be issued in September, October and November, 1852, and orders are solicited in advance, payable on delivery to Merchants, or to the parties themselves.

DEBOW'S REVIEW, of which this is a condensation, is published monthly in New Orleans, and other southern and western cities, 112 to 140 pages, small print, fine paper and engravings, and treats of all the great industrial matters relating to the Southern and Western States, and incidentally of the North and the Union. Terms $5 per annum.

The volumes hereafter will be uniform with the condensed series.

A few sets of the complete work may be had at the office, in 12 large and handsomely bound volumes. Price $42. Single numbers supplied to make up sets, and binding furnished on reasonable terms.

☞Orders on Commission Merchants in cities or towns, payable on sale of crops, received as cash.

J. D. B. DEBOW,
Ed. DeBow's Review, Merchant's Exchange.
New Orleans, July, 1852.—6t

HUNT'S PATENT WHEAT DRILL,

THE subscriber invites the attention of farmers to this improved Drill, as a machine, durable, simple in construction, and effectual in its operation.

At the last Baltimore Fair, it was pronounced to be the best Drill that was exhibited. Price $65.

Those in want of a superior Wheat Drill are requested to give this a trial, and send in their orders early, as a small number only will be made, and warranted to perform equal to any other. H. BALDWIN,
sep—1t 148, Main Street, Richmond.

COCHIN CHINA AND SHANGHAE FOWLS,

THE Subscriber has for sale, choice Fowls of the above variety, pure blooded from stock imported direct from China, warranted true to their name, and not surpassed for beauty, size and good qualities, by any other breed.

Reference given in regard to them if desired—Address

CHARLES SAMPSON,
West Roxburry, Mass. or W. A. Butters, at Nash & Woodhouse's, Richmond, where a pair of each can be seen.
sep—tf

FARMERS READ!!—ANHYDROUS GYPSUM.

(*Copy.*) LONDON, 2d April, 1845.

Analysis and chemical examination of a sample of Anhydrate or Anhydrous, (dry) Gypsum or Sulphate of Lime, for Mr. Geo. Duncan, Truro, Nova Scotia, by Andrew Ure, M. D., F. R. S., Professor of Chemistry.

Specific Gravity: 2,85, being the medium density of the Mineral, as stated by the best Mineralogists.

100 parts of the Sample consist of—

Pure Sulphate of Lime, without Water,	95
Oxide of Iron,	2
Muriate of Soda, (Chloride of Sodium,)	1
Moisture in the pores of the Mineral,	2
	100

The above Composition resembles the Anhydrite of the Tyrol, in containing 1 per cent. of Common Salt. In ordinary Gypsum there are 21 per cent. of water, so that the above is proportionably richer as a Manure, especially for mixing with Guano; for fixing its loose Ammonia, and for supplying to Soils the Gypsum so useful to the growth of Clovers, and of all leguminous plants. The 95 parts of Sulphate of Lime, (present in 100 of the sample,) consist of about 39 of Lime, and 56 of Sulph: = 95.

[Signed,] ANDREW URE.

ANHYDROUS GYPSUM.

THIS newly discovered Manure which has been found to have wonderful properties in promoting vegetation, is now offered for sale in this city. Its effects upon growing crops are surprising, and it preserves them from the ravages of insects. A single trial will establish its virtues. The following certificates are from parties well known in this country:

William Clarke, Esq., of Belmont, communicates: "Two experiments were tried on the same day, done by sowing the Swedish and Aberdeen Turnip, and using as a manure Anhydrous Gypsum; and the other by sowing a part of the same seed on lands adjoining, and using stable manure. The result was as follows: Where the Anhydrous Gypsum was used, the plants were up two days earlier, and are in perfect health. The others after coming up were all cut off by the fly. The introduction of this new Manure for agricultural purposes should not be overlooked, as it evidently forces vegetation, and protects it from being destroyed by insects.

Turnips are cultivated largely in England for feeding of Stock. Mr. James Copeland, of Colchester, N. S., is an English Practical Farmer, who understands the cultivation of that root thoroughly—was induced to try the Anhydrous Gypsum on Turnip plants that were up from three to four inches high, in consequence of their not appearing thrifty. He strewed the Anhydrous Gypsum all through the drills round the plant, and in eight or ten days a great change took place for the better, and the result was finally an uncommon large growth of turnips, many of them weighing 17 lbs. each, and surpassing any crop that he ever saw in England. (Truro, 1846.)

A. M. Cochran, Esq., of Maitland, Nova Scotia: Having used Anhydrous Gypsum by strewing it on the top of stable manure, in drills, and laying the seed (or cut potato) in the usual manner, an extraordinary growth ensued. He tried potatoes in drills adjoining, with stable manure alone, and a great disparity of growth followed.

It has been ascertained by Scotch Chemists that the hard brown substance that forms in potatoes when diseased, is ammonia, which has been called rot.

Manures generally, such as stable manure, Guano, &c., are carbonates, and are non-conductors of electricity. When the atmosphere is in a certain state, and drought ensues, the circulation of succulent matter is checked and the potato then becomes diseased—by using Anhydrous Gypsum alone, or combining it with stable manure, or Guano, the plant receives its nutriment from Sulphate of Ammonia, which is a conductor of Electricity, and gives the electric action to the plant, which ensures health and vigor, and prevents rot. These instructions should be closely attended to—many experiments have been tried on various flowers, roots, and particularly onions, by merely strewing round the flowers and on the beds on the surface of the soil. All have been successful.

Thomas J. Brown, Esq., of Colchester, used the Anhydrous Gypsum on very poor grass land, and it gave an uncommon crop of grass years in succession.

Owing to the chemical compound of this mineral, there is little doubt as to its being an invaluable introduction to the agriculturist. For sale by

J. H. EUSTACE & SON,
oc—1t *Sole Agents.*

EAGLE FOUNDRY.

THE subscriber having removed to the large Foundry, just erected by him and fitted out with machinery of the latest and most approved style, is, in addition to the manufacture of Tobacco Flattening Mills, prepared to receive orders for Stationary Steam Engines, Saw and Grist Mills, Agricultural Machines, Tobacco Presses of every description, and all kinds of Iron and Brass Castings. He pledges himself to execute faithfully, and with dispatch, all work entrusted to him, and respectfully solicits a call from his friends and the public generally.

The highest cash prices paid for old cast iron, brass and copper.

PHILIP RAHM,
je—1y Cary, between Pearl and 15th sts.

BOOK AND JOB PRINTING executed at this Office with neatness and dispatch. Office South Twelfth Street.

WILLIAM P. LADD,

APOTHECARY AND DRUGGIST,

No. 319, head of Broad Street, Shockoe Hill, Richmond, Virginia.

DEALER in English, Mediterranean, India and all Foreign and Domestic Drugs and Medicines; also, Paints, Oils, Varnish, Dye Stuffs, Window Glass, Putty, &c. For sale on the most accommodating terms.

☞ Orders from Country Merchants and Physicians thankfully received and promptly attended to.

ja 1851—tf

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

STOCK Cattle of all the different breeds, Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged. Apply to

AARON CLEMENT, *Philadelphia.*

Refer to Gen. W. H. Richardson, Richmond, Virginia.

N. B.—All letters, post-paid, will be promptly attended to. ap—tf

VIRGINIA AXES.

THE undersigned, in connexion with their Rolling Mill, have erected an extensive Manufactory of Axes, Hatchets, and Tools generally, which they warrant equal to any manufactured, and offer at Northern prices. They solicit the patronage of the agricultural community.

R. ARCHER,
A. D. TOWNES,
R. S. ARCHER,
C. DIMMOCK. } R. ARCHER & CO.

oct—1y

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT-HORNED CATTLE.—The subscriber will offer for sale, his entire herd of choice short horns, comprising 50 head, young and old at public Auction, on Wednesday, the 13th of October, 1852, at 1 o'clock, P. M. at his Farm 2½ miles from the City of Troy; reserving to himself one bid on 5 Cows and Heifers, and 1 Bull, say 6 head in all, and these to be pointed out previous to the commencement of the sale; this bid will be made public when the six animals are brought to the stand for sale. Should any gentleman advance on the single bid made by the proprietor, the highest bidder will be entitled to the animal. It is proper to say, the severe drought in this vicinity reducing the hay crop one half, has decided the proprietor to make this sale at the time named, instead of next June, which he had purposed to do.

The well established reputation of this herd in this Union, and in Canada, and the splendid herd it has measurably sprung from, viz: the famed herd of that eminent English breeder, the late Thomas Bates, Esq. renders it hardly necessary to comment upon its superior merits. It may not, however, be unappropriate to remark, that the establishment of this herd was commenced in 1838, and that the most careful attention has since been paid to its breeding, and that it now contains mostly all the reserved stock of two former public sales. Since 1840 the proprietor has imported from the late Mr. Bates, and his friends and late tenants, the Messrs. Bell's, 7 herd of Short-Horns. And besides these, he has now on the passage across the Atlantic, shipped 21st of June, on board the Packet Ship Kossuth, Capt. Jas. B. Bell, a superior yearling roan Bull, having many crosses of the famed Duchess Bulls of Mr. Bates. Including this latter animal and the two beautiful red roan 3 year old Heifers, which came out from England last September, "Yarm Lass" and "Yorkshire Countess" and the beautiful Heifer Calf of the latter animal, got in England by the Duchess Bull 5th Duke of York, there will be 14 head of this imported stock, and its immediate descendants. There has been sold from this herd but three Heifers from these importations, and these Heifers were sold at $300 each. All the young Bulls bred from these Cows, except those now offered for sale, have been also sold at private sale, at $300 each, most of them while quite young.

Besides these 14 head of high bred animals, the noble premium Cow Esterville 3d, bred by E. P. Prentice, Esq. of Albany, and her equally fine 2 year old, red and white Heifer bred by me, got by the Bates Bull Meteor, and 3 of the famed milking Willey tribe, the same tribe of Cows as the Heifer Ruby, sold by me to Mr. S. P. Chapman of Madison Co. and which Cow was awarded the first premium by the New York State Agricultural Society, for producing the largest quantity of butter in 10 days in June, and 10 days in August, on grass pasture only, being a fraction over 40 lbs in those 20 days. There are other valuable tribes in the herd, as the printed Catalogue will show.

The Catalogue will be ready for distribution about the 1st of August, and will exhibit richness of pedigrees rarely to be met with, showing the descent of the most of the animals from the best animals on record in the English Herd Book. Having received an invitation from H. Strafford last winter, to forward a list of the pedigrees of my herd to be inserted in the forthcoming volumes of the English Herd Book, of which Mr. Strafford is now the Editor, several pedigrees were sent to him of the animals here offered for sale, and will appear in said book.

A credit of 9 months will be given on all sums up to $300, and 9 and 18 months on all sums over $300, for approved paper, with interest, payable at some Bank in this State.

GEORGE VAIL.

Troy, N. Y. Sept. 1852—2t

GREAT REDUCTION IN PRICES OF HATS AND BOOTS.

J. H. ANTHONY'S FASHIONABLE HAT STORE, *Columbian Hotel Corner.*

THE cheapest place in the city of Richmond to buy HATS and BOOTS is at the above store, where every article sold may be relied on as represented. By this means he has gained a good run of custom, and his customers feel satisfied. Below is a list of his prices, which will be strictly adhered to:

Best quality moleskin, - - -	$3 50
Second quality " - -	3 00
Best quality silk, - - -	2 50
Second " " - - -	2 00

Fine Calfskin Sewed Boots only three dollars and fifty cents.

Also, CAPS, SHOES and UMBRELLAS.

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LIVINGSTON COUNTY PLOUGH.

THE subscriber having greatly increased his facilities for manufacturing the above Ploughs, will be able to supply orders for Ploughs or Castings on a larger scale of the following numbers and sizes:

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No. 2. Light 2 Horse Plough
No. 2½. " " " "
No. 3. Heavy " " "
No. 4. Three Horse Plough
} Right Hand.

No. 4. Heavy 2 Horse Plough
No. 5. Three Horse Plough
No. 6. Four Horse Plough; but generally used for 3 horses.
} Left Hand.

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G. S. Harper, Esq. Appamattox County,
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For the Southern Planter.

COMMUNICATED TO THE VIRGINIA STATE AGRICULTURAL SOCIETY,

On July 16th, 1852, and ordered by the Executive Committee for publication.

THE PROFITABLE IMPROVEMENT OF POOR LAND, AND EITHER MAINLY OR ENTIRELY FROM ITS OWN RESOURCES.

BY EDMUND RUFFIN.

For nearly or quite half a century—or as long as essays on agriculture have been written and published in this country—the subject of enriching poor or exhausted lands has been under discussion, and seems still to be an open question. In latter times premiums have been offered for the best plans—and some very good papers have been written by men who were both practical and intelligent farmers—and in all the time referred to, many other articles, wild or foolish, by writers who were merely theorists, or but closet agriculturists. I have not before undertaken to discuss this question independently and exclusively. Still, a large portion of the contents of my various agricultural writings bear more or less directly upon this subject; and a large portion of my practice and labors, as a farmer, and improver of soil, for nearly forty years, have been directed especially to the object of enriching poor lands, and, except in the earlier attempts, always with more or less of successful and profitable issue. Upon these grounds, I will presume to offer my views and instructions, in addition to the many preceding, as to the improvement and fertilization of poor lands—and in the manner that will be supposed of least cost in proportion to the benefit to be gained—and the most effectual, and durable, and also profitable, for the condition of the land and the other capital employed. I shall recommend no means which I have not tested and found successful, and in long and large practice—(unless stated otherwise—) and therefore may venture to claim, in advance, that every instruction and every statement to be offered will have been fully tested by experience—although not in connexion, as parts of one entire and regular plan of operations, pursued exclusively and continuously, and without omissions or additions.

Among the best recent essays on this subject were two by practical farmers; Edward Stabler and Horace Capron, of Maryland, which were published in the American Farmer of 1848, and to which were awarded the first, and second premiums offered through that publication for the best instructions for the improvement of poor and exhausted lands. However much the particular and more especial recommendations of these pieces varied from each other, and from any others on the same subject, these, and all others of any extensive practical value, or worthy of consideration for their main object, have concurred in one of the various means proposed for securing the improvement they arrived at. This was *liming*—or in more general terms, the application of calcareous manures. This, as I think, was the indispensable part, the very foundation, of each of these instructions—as it must be of every useful scheme for enriching naturally poor lands, at least. And though to many of the readers of all such pieces, (and perhaps also to some of the writers themselves,) the one feature of liming may have appeared less prominent than some others in company, as for example, deep ploughing, trench or sub-soil ploughing, gypsum and clover, guano, grass or root husbandry, stock management, compost manures, &c. &c.—and although each and all of these, may have been very useful auxiliary means—still, I maintain that all these, if without liming, would have effected but little, or nothing for *profitable* fertilization; and that liming would have effected much, even if without any unusual or expensive aids. Therefore, for my plans for improving poor lands, with profit, I also must not only require calcareous manure, but claim it as essential means. But except this, if a purchased commodity, and for the seeds of a portion of the green-manuring crops, nothing will be required for the great and profitable improvement of a poor farm, under usual circumstances, other than the labor and resources of the farm itself. Other foreign or expensive aids are not therefore deemed unadvisable or unprofitable. If judiciously used, such aids, doubtless, would add much to the profit to be derived, or to the quickness of attaining it in large measure. But they may be postponed, or substituted, or even dispensed with alto-

1852—Dec.

gether; neither of which can be done as to lime.

The whole system of instruction which I propose, or the directions comprising every rule essential to improvement, fertilization, and production, may be stated generally in a few short sentences, thus:

1. Drain all arable land that greatly needs it—or if the draining would be too costly, cease to cultivate that portion. Lands suffering much from excess of water, cannot be enriched by manures of any kind, are cultivated with great difficulty, and produce crops much below their grade of fertility.

2. Apply marl or lime, properly, and not excessively or unequally, on all ground not naturally calcareous.

3. Let the fields have enough respite from tillage, and from bearing market crops, and also from grazing, so that they may derive from their own growths, left on the ground, added to the farm-made putrescent manure, more enriching matter than is abstracted by the crops of the rotation, and thus removed from, or lost to the farm.

4. So far as may be *cheaply and profitably done*, add to, or substitute the natural growth of weeds, &c. by clover or other and better manuring growth—and collect and apply as manure all available supplies of other vegetable or animal matters, which are not already diffused over the lands, as is the case with grass, weeds, stubble of grain crops, &c.

5. Plough well, prepare for and till crops carefully, and especially pursue a judicious rotation of crops and culture, suited to the existing conditions of the locality, and the wants of the farm.

I shall not attempt to argue or adduce evidence in support of these opinions. Nor will the directions be extended into detail. The occasion forbids both. Deeming that my views will be made more clear, and perhaps the instructions be the more impressive by the novel manner of illustration in which they will be presented, I will suppose and describe a particular case of land and its conditions, and also the general but sufficiently precise method and procedure for its improvement, as illustrative of my opinions, and the results of their application. But the conditions supposed will be similar in all essential points to those of thousands of farms and their proprietors. Folly or quackery only would recommend one system of improvement as suitable to or preferable for lands in all situations and under all different circumstances and conditions.

As it is not designed to embrace any conditions with which I am not practically and well acquainted, let it be supposed that the farm in question is in the tide-water region of Virginia, (or below the granite range which forms the falls of the rivers—) and, (for convenience of reference,) that it contains 300 acres of arable land, in three fields, heretofore enclosed separately by dividing fences. There is enough wood-land to supply the farm with fuel and fencing timber—and also enough to have before permitted the usual former practice of clearing some acres of "new-ground" every winter, to add to the space cultivated—or, more generally, to supply the place of as many acres of the most exhausted and worthless old land, which then would be "turned out" of culture.

The land does not require drainage, except such as the ploughing in ridges may serve for. Or if other draining is required for some parts, it is either so easily done as to be executed by the farm laborers, among the other labors annually recurring of preparation and tillage—or, if more costly, that the returns increased thereby are rich enough to repay the cost with profit, and so reimburse, as a separate matter, the extra expenses and profits of drainage.

The surface of the farm is not so hilly as to add much to the difficulty or disadvantages of ploughing and culture, or to produce much injurious and unavoidable washing by rain-torrents. The soil is not too clayey for corn, nor too sandy for wheat culture. But little of the land was rich naturally, and much of it was poor at first, and all had been much reduced by exhausting tillage. The rotation latterly had been the usual and very exhausting one (though formerly the mildest in use,) of three-shift, 1. corn, 2. wheat on as much of the land as could bring say 3 bushels to the acre, (or oats instead—) and the still poorer part left without a crop—and 3. grazing by as many lean cattle as could find bare subsistence. The products might be 10 bushels of corn to the acre, on an average through the field, and 4 bushels of wheat on the 50 best acres of the 100 in each field—the other 50 being too poor to bring even 3 bushels.

The few cattle supported by the untilled field, with the aid of the woods' or outer range, served to furnish a scanty supply of milk and butter, to keep up one or two pairs of poor oxen, and rarely to supply a middling beef. The cattle consumed, as food and litter, the offal of the crops, and converted the remains to manure. The few sheep were as ill provided with food, and of as little profit as the cattle. If hogs enough were kept to provide bacon for the family, whether on the pasture field or the woods' range, they generally cost as much in the corn they consumed, and were kept poor upon, and that required afterwards to fatten them, as the meat obtained was worth.

Such was, 30 years ago, the condition, (if not still worse,) of much the greater number of farms in the old settled parts of lower Virginia. Of the few exceptions, some were so because of containing more or less land originally fertile. But the greater number of exceptions were caused by still more exhausting tillage than that supposed above—or still more exhausted fields, and smaller products.

Now suppose a new proprietor, by inheritance or purchase, to become possessed of the farm, and to determine to begin its improvement. His predecessor had, by the former

course pursued, barely supported his family each year—or barely avoided making absolute loss on his farming, and diminution of his capital. The present occupant might continue to do the same. So we will suppose the former tillage to have been barely remunerative—causing no actual loss of capital, and yielding no profit, beyond paying expenses, and furnishing a support to all on the farm. The new proprietor, like the former, has no surplus capital, beyond the farm, its stock, provisions for the year, and necessary implements. He is not able to pay for costly means for improvement. He cannot reduce the extent of corn-culture, to devote the labor so saved to improvement, because every bushel of the product is required for the consumption of the farm.

The farm has marl, as yet unused. The proprietor understands its value, and has learned how to work and apply the marl. His first arrangements are planned with a view to the performance of these operations. He must, indeed, go in debt for the new and additional expenses required. And however wrong and dangerous it always is for a farmer to incur debt for articles to be consumed, and to return no profit on the use, the case is entirely different for such outlay as is here proposed. Further—such a man, and for such a purpose, can have no difficulty in obtaining, on loan, the necessary amount of funds, and at sufficiently long time for payment. He must, however, be very sure to pay the interest annually and promptly, even if by bearing some privations. If required, his land will be the ample security for the debts thus incurred.

Operations of the First Year.

In the beginning, the farmer cannot alter much the former course of cropping. But he sells, (if possessing) the larger portions of the cattle and hogs, and all the sheep. The few retained hogs are well kept in a sty, or a small enclosure; and the few cattle are kept (well or ill as it may be, but) principally elsewhere than on the fields. At any rate, from their reduced number, even if still permitted to graze on the field not tilled, it will lose but a small portion of its product of weeds, or grass, by being grazed or trampled; and the much larger proportion of the whole vegetable cover will all go to manure the field. This supply is indeed small, and the manure poor, but such as it is, it is nearly a clear gain. The stock management and products could scarcely be worse than before, and probably are better. If not better the first year, they will become much better and also more profitable in a few your thereafter.

The farmer begins to marl as soon in the year as possible, with a force suitable to the designed operations. As the necessary amount of force depends upon the circumstances of the operations, and as this force neither can nor ought to be kept entirely distinct from that for the other and ordinary farm labors, the cost of the extra force employed for marling cannot be estimated otherwise than by the amount of this particular labor performed. There is much time of the year, when the ground is wet and soft, that carting marl cannot be done advantageously, and when the team and hands can be profitably used for other farm labor. There are other times of pressure for the crops, when hands or teams, or both, may be worth double their usual value. At such times, it will be economical to so devote the marling force. There are other times, in winter, when the earth is either water-soaked, or covered with snow, or hard frozen, and unfit for all usual farm labors, when the removing the overlying earth from marl may advantageously engage all the farm hands. Thus, by exchanges of labor, the marling may be greatly forwarded, and yet the crop labors greatly aided in pressing occasions, and so a greater quantity of crop may be cultivated and secured. For all these considerations, the extra force employed for the purpose of marling must be charged to that operation by the amount of such labors actually performed. It is to be presumed, that whenever the farmer shall use that force for other labors, that its direction will be not less profitable.

At different times, and under different circumstances, I have made careful estimates of the expenses of four distinct marling operations, each of considerable extent. The difficulties of these different labors were all greater than the average throughout all the marl lands of lower Virginia should be, and therefore my operations were of greater cost. The carefully estimated total expenses for the 100 heaped bushels of marl spread on the field, for these four operations, were respectively 142, 97¼, 86 and 94 cents. These rates were obtained by careful estimates of the costs of all the elements of labor, for a time embracing 1846 and a number of years preceding; and these operations having been more laborious than is usual, and the first of them (at $1 42) very much more laborious, (and was discontinued on that account,) I am sure that 86 cents for the 100 bushels would have been higher than a fair average price, in all the space of time stated. And the prices for labor, as then estimated, were full high for a general average of all the past, or any considerable previous time—and also may be for the time now to come * But recently, and now, under the extraordinary demand for labor for public works, and of high prices of cotton at the south, the prices and hires of slaves have been much increased. Mules also still sell as high as when the demand for government use, in

* The costs of all the elements of marling labors, were published in all the three last editions of the "Essay on Calcareous Manures;" and the same corrected, which are used as grounds in this piece and also some extended estimates of expenses, buil upon these grounds, and elements of cost, will appear in the next edition, now in the course of publication.

the Mexican war, so greatly raised the price of mules, and created a general scarcity not yet removed—though the prices of horses have not much advanced. These much higher prices, being produced by transient causes, ought not to be charged as if usual. But something ought to be allowed for the advance. This allowance I will put at one-fourth of the supposed previous and usual fair average price of 96 cents—which addition will make 120 cents for the 100 heaped bushels of marl, to be uncovered, dug, hauled to and spread upon the field.

With two extra horses or mules for the marling force, aided by, and also aiding the farm force, as above stated, it will be easy enough in a year to marl all the field of 100 acres then at rest. The marl is the ordinary *miocene*, having no appreciable manuring element except the carbonate of lime—and of that containing 40 per cent. It is laid on at 300 bushels to the acre, which will give a trifle more than 1 per cent. to the ploughed depth of soil of 4 inches; and of course less in proportion, in later time, for the depth of soil and of ploughing when increased to 6 or more inches.

The 100 acres then will have received 30,000 bushels of marl, at 120 cents the 100 bushels, or at the total cost of $360. This should be the separate expense incurred for this object; and for which a debt of that amount has been incurred. This is the simplest and most correct mode of stating the expense—though it may be very different in amount from the first outlay actually made. For if purchasing two mules or horses, and two or three young negroes, as well as the carts and implements, perhaps the first outlay required might be $1500 or even $2000; and yet, after 5 years' operations, the remaining stock might possibly then be worth quite as much as the whole at first. In such a case, the advocate for this as the only correct mode of estimating the expenses, would arrive at the absurd conclusion that 5 years' marling operations had cost nothing for hand or team labor. All such chances of gain or loss, on the rise or fall of market value of laboring force, must be excluded from any fair estimate. The amount here charged, of $360, is for annual hire of hands, of interest on capital expended in purchases, and supposed usual deterioration of stock—all fixed by careful estimates and fair average of prices and values.*

At the end of the first year, the farmer, upon his cultivation, (as in former times,) will have just paid the ordinary expenses, and provided a year's support for the farm—and owes $360. He has saved something in the capital of live-stock, by selling off, (or otherwise by not buying in,) two-thirds of the unprofitable animals before kept; and he has to encounter, at first, other difficulties not much less costly in supporting the small number left, whether outside of his fields, or partly herded therein. The early gain in one respect may balance the inconvenience in the other.

As the fields are not to be grazed, as yet, the farmer will save hereafter all the expense of the fences which before separated the fields. For the next winter, and one or two more, he will have no new fencing to build, and can repair the general enclosing fence with the now surplus rails of the old division fences. He will also save the before usual and annual expense of clearing poor woodland, upon which no clear profit had been made. There will no longer be any need to "turn out" the poorest arable spots—and therefore no necessity to supply the deficiency continually so caused, by bringing in newly cleared land, however poor or unprofitable.

Operations of the Second Year.

The fields produce sheep-sorrel when under crops, and poverty-grass when at rest. Of course the soil is *acid*, and marl will thereon produce the quickest returns, and the greatest per centage of increase on the former products. On such lands, after two years of rest, and five or six of exemption from grazing, and with about 500 bushels of marl to the acre, (a wasteful, and subsequently an injurious quantity,) I have rarely failed to obtain on the first crop an increase of 50 per cent.; more often made 100—and in some cases full 200 per cent. increase of corn, and of wheat next following, upon the previous production. But in the case now under view, there has been but one year of rest and exemption from grazing, (or two on the poorest half of each field, not put in wheat—) and the more economical and safe

* The absurd conclusion above referred to would appear strikingly in my own recent labors. In 1844 was performed the largest job of marling of which the expenses were carefully estimated, and which is the one stated above as costing 94 cents for the 100 bushels of marl. It so happens that the particular mule whose work was then separately estimated, and also three others of the eight I then owned, are still in my possession, and though more than at full age for labor in 1844, either of these four mules would now sell for more than in 1844, owing to the now higher market prices. For the same and other reasons, the hands then employed are worth more now. Hence, if any such extra force had then been bought by me for marling (which, however, was not the case) the actual result would be, that, instead of paying anything for the labor for eight years' marling, the laborers would have returned a clear profit. But though such is the actual result, it would be improper and incorrect to admit any part of such gain as a lessening of the estimated cost—as it would be to charge losses under the contrary conditions of reduced market value, or deaths of laborers and mules. And it is not less incorrect to admit temporary alterations of even annual expenses, to govern estimates designed for much longer times. Hence, the increase of cost allowed above, upon the supposed fair average of 96 cents, to 120 for the 100 bushels of marl applied, is not justly required, unless the higher prices shall be enduring—and at all events the allowance of increased expense is ample.

amount of 300 bushels of marl only was applied; and though greater future net profit will be derived from this smaller application, there will be less of immediate and gross return. Still the first increase may be safely estimated at 50 per cent. Then the marled land which before would have brought 10 bushels of corn, will now bring at least 15. Then 67 acres will make as much corn (1000 bushels,) as 100 acres did before. Therefore, 67 acres of the marled field (No. 2,) only will be put under corn; and the remaining 33 acres ploughed for pea-fallow, and the peas sown broad-cast late in May, or early in June—or even to the 10th of July—to prepare for and precede wheat. A portion of the other part, in corn, may also, (for trial,) be sown in peas, and the seed covered by the latest tillage of the corn. If found of sufficient manuring benefit upon the wheat crop following, this interposition of peas between the corn and wheat may be made general. But, though I approve and practise it, no present account of that operation will be observed here, either as to its cost or profit. Either sowing, with the aid of the previous marling, will produce a good cover of pea-vines—but especially on the 33 acres given entirely to that growth. Both parts of the field, in corn and in pea-fallow, will be sown in wheat in autumn.

But this pea-fallow will have cost money for seed, and additional labor of ploughing and harrowing. The money cost will be charged. But the labor is fully compensated in the omission of both the ploughing and cultivation of the same land in corn, for which part of the former culture this pea-fallow was substituted.

In the course of this second year, all the field (No. 3,) then at rest, will be marled.

At the close of the second year the farm account, so far as affected by the new practice, will stand thus:

Second Year—Farm Dr.

Marling of previous year, (Field 2) $360, and interest (paid) $21 60, -		$381 60
Marling in current year (Field 3),		360 00
Seed peas, 33 bushels at 70 cents,		23 10
Additional seed wheat for 50 acres, 50 bushels, at 90 cents, -		45 00
Extra, for contingences of beginning operations, - - -		9 60
Total debits, - - -		$820 30

As the former products were supposed barely to remunerate the expenses of cultivation, no account will be taken of either these products or expenses, except as to their subsequent increase or decrease. By reducing the space under corn, (from 100 to 67 acres) there has been no notable increase of that crop—and no wheat yet reaped from marled land.

Operations of Third Year.

The field first stated as under corn culture, (No. 1,) is now at rest, and is marled during this year. According to former usage, one-half had not borne wheat, and so had had two years of rest. Field 3 comes under corn—and, as in regard to No. 2, two-thirds only of the field are planted in corn, and the other third put in pea-fallow—and all the field afterwards in wheat.

At the close of the year, the account will stand thus:

Third Year—Farm Dr.

Balance due at close of second year, - -	$820 30	
Interest for same, for 1 year,	49 22	
		$869 52
Marling of current year, -		360 00
Clover seed for 100 acres of wheat-land, 10 bushels, at $5, - (Seed peas, 33 bushels, saved from the crop.)		50 00
Seed wheat, additional, 50 bushels, at 90 cents, - - -		45 00
Total debits, - - -		$1,324 52

Farm Cr.

Increase of wheat on 50 acres, after corn, from 4 to 6 bushels,	100 bush.	
New product of wheat on 17 more acres of corn land at 6 bush. -	102	
New product of wheat, on 33 acres of pea-fallow, at 10 bush. -	330	
Bushels, - -	530 at 90,	$478 80
Amount of debits, - - -		1324 52
Balance due, - - -		$845 72

Operations of Fourth Year.

The field first cultivated (No. 1,) is now again for corn (according to the former course,) and has been all marled during the past year. This completes the first marling, at 300 bushels. But that is not deemed enough for the now improved soil, and its better supply of organic matter, and consequent need for more calcareous matter to combine with the increase of organic, and also to supply the increased depth of soil. The marling is continued on part of the field at rest, (No. 2,) but only at the rate of 100 to 150 bushels, and that application is not to be extended to more than 50 or 100 acres for each year, until all shall have been thus remarled. This change will leave free, from half to more than three-fourths of the labor previously given to marling, to be diverted to other and now increasing farm labors. For though, as yet, the corn-culture is even less laborious, for its space, (by the sorrel having been destroyed by the marl,) the larger wheat preparation and harvest labors, and thrashing, and also the transportation of putrescent manures, have all become more laborious. The gradual transference of from

half to two-thirds, and finally all the labor before given to (and still charged for) marling, will serve to supply all these new demands, until other provision shall hereafter be made for their still greater increase.

Of the field No. 1, as before, 67 acres only are put in corn, and the remaining 33 in pea-fallow. As a change of rotation is to begin next year, the culture for this year must be made suitable for that change. On this account, the 33 acres of pea-fallow and 17 of the land in corn or 50 in all of this field, only will be sown in wheat. The other 50 will remain idle until next year, then to be put in pea-fallow, according to the designed new rotation.

The field No. 2 is this year at rest, and under clover, of such moderate product as the still poor land, and the seasons, have permitted to grow. This clover has received this year (as the beginning of a regular practice,) all the manure from the stables and barnyard, as top-dressing. Gypsum should be tried, as it succeeds in most cases on clover after marling, where totally inert if applied before. The putrescent manure of the farm is now much increased in quantity—and its operation is now as abiding on the land since marling, as it was fleeting before. It has begun to add considerably to the increase of crops. Of field 2, embracing the portion of clover top-dressed, 50 acres are fallowed in August and September, and subsequently put in wheat.

Fourth Year—Farm Dr.

Balance due, - -	$845 72	
Interest on same, -	50 74	
		$896 46
Expense of extra force before for marling, but now mostly aiding other labors, - - - -		360 00
Clover seed 10 bushels, - -		50 00
Additional seed wheat, 50 bushels at .90, - - - -		45 00
Total debits, - -		$1351 46

Farm Cr.

Increase of wheat crop on 50 acres formerly sown, at 2 bushels, - -	100 bus.	
Additional 17 acres after corn, 6 bushels, -	102 "	
Additional 33 acres pea-fallow, at 10 bushels,	330 "	
Bushels - - -	532 at .90	$478 80
Amount of debits, - -		1351 46
Balance due, - - -		$872 66

Operations of Fifth Year.

The irregularity of the supposed preceding culture, and some of the defects of the description, were required by the necessity of preserving without any abatement the previous supply of corn. Now there has been enough improvement made to admit a more regular and better rotation. This year, the corn (on Field 2,) for the first time will be a second crop after the first marling of 300 bushels, and with the aid also of the later addition of 100 or 150 bushels of marl to the acre, according to the increased wants of the soil. The effect of the former dressing, if alone, would now be fully doubled, or giving an increase of 100 per cent. on the first stated production—making the rate 20 bushels of corn to the acre. The clover also, though mostly of dwarfish growth, was well sprinkled over the field, last year at rest, and which is now to come under corn. The clover, poor as it may be, is a profitable exchange not only for the former scanty growth of poverty grass, but also of the ragwort and other weeds more lately indicating much improved fertility.

Each of the former three fields is now to be divided into two, and hereafter upon each one of these six fields, is to be commenced the same rotation of six shifts, which it will be enough to describe for one course, or one field, only.

The former field No. 2, which according to the first three-shift course would have all come under corn this year, was last year under clover in its second year of growth. This will make two fields (A and E,) of 50 acres each. One of these, E, was last summer fallowed for wheat, as before stated; and the other, A, this year (the 5th) will be under corn. The following tabular view, with the accompanying explanations, will exhibit the past as well as the designed future course of culture, and estimated production to the 11th year from the commencement of the improvement by marling.

CULTURE UNDER THE MODIFIED THREE-SHIFT ROTATION.

Year.	Field No. 1—100 acres.	Field No. 2—100 acres.	Field No. 3—100 acres.
1st	*Not marled*—100 acres in corn—(10 bushels the acre.)	At rest, in weeds. *Marled.*	50 a. wheat (4 b.) 50 (poorest) at rest.
2d	50 acres in wheat, (4 b.) 50 acres at rest.	Corn, 67 a. (15 b.) 33 a. pea-fallow.	At rest—*Marled.*
3d	At rest, in weeds. *Marled.*	Wheat, 67 a. (6 b.) 33 a. wheat, (10 b.)	67 a. in corn (15 b.) 33 pea-fallow.
4th	67 a. in corn, (15 b.) 33 a. pea-fallow.	At rest, in clover. 50 acres fallowed.	67 a. wheat (6 b.) 33 wheat (10 b.)

SIX-SHIFT ROTATION.

Year.	Field A, 50 acres—(half of former No. 2.)	Field B, 50 acres—(half of former No. 1.)	Field C, 50 acres—(half of former No. 1.)	Field D, 50 acres—(half of former No. 3.)	Field E, 50 acres—(half of former No. 2.)	Field F, 50 acres. (half of former No. 3.)
5th	Corn (20 b.)	Pea-fallow.	17 a. wheat after corn, (6 b.) 33 a. wheat on pea-fallow, 10.	Clover—fallowed.	Wheat, 35 a. at 12 b. and 15 a. 16 b.	Clover or weeds.
6th	Pea-fallow.	Wheat (12 b.)	Clover—fallowed.	Wheat (12 and 16 b.)	Clover or weeds.	Corn (20 b.)
7th	Wheat, (12 b.)	Clover—fallowed.	Wheat (12 and 16 b.)	Clover or weeds.	Corn (20 b.)	Pea-fallow.
8th	Clover, fallowed.	Wheat, (12 and 16 b.)	Clover or weeds.	Corn (20 b.)	Pea-fallow.	Wheat (12 b.)
9th	Wheat (12 and 16 b.)	Clover or weeds.	Corn, (20 b.)	Pea-fallow.	Wheat (12 b.)	Clover—fallowed.
10th	Clover, or weeds.	Corn (20 b.)	Pea-fallow.	Wheat (12 b.)	Clover—fallowed.	Wheat (12 and 16 b.)
11th	Corn (25 b.)	Pea-fallow.	Wheat (18 b.)	Clover—fallowed.	Wheat (18 b.)	Clover or weeds.

The new rotation is of 6 fields of 50 acres each, and with the succession of culture stated under the head of each, in the foregoing table. More extended in description, the scheme of rotation, which is the same I have for some years practised, and still prefer, is the following:

1st year, Corn—

2d year, Peas, sown broad-cast, and ploughed under in autumn for

3d year, Wheat—clover sown. Grazed and trodden more or less after removal of wheat.

4th year, Clover—(receiving all the manure as top-dressing—) first crop partly mown—(or partly grazed) second, ploughed under in August and September for

5th year, Wheat.

6th year, Clover or Weeds, grazed until in June.

As before stated, the 50 acres in corn (on A) will now produce double its former crop to the acre, or as much as did the 100 acres before marling.

The wheat is on (Field C,) 33 acres of pea-fallow producing 12 bushels, and 17 acres after corn at 6 bushels, and (on Field E,) 50 acres of clover-fallow, (and oldest marling, and with second marling added,) and on part of which all the manure made the previous winter and spring had been applied as top-dressing. If this manuring covered 15 acres, the wheat thereon should be full 16 bushels, and 12 for the unmanured 35 acres.

This will make the total crop of wheat as follows:

On 17 acres after corn, 6, - -	102
On 33 acres after pea-fallow, 12, -	396
On 35 acres, clover fallow, 12, -	420
On 15 acres, of same field, manured, 16,	240
Bushels, - - - - -	1158

Fifth Year—Farm Dr.

Balance due at end of 4th year, - -	$872 66	
Interest, - -	52 36	
		$925 02
Cost of force formerly marling, and now mostly otherwise engaged,		360 00
Clover seed, 5 bushels, (none sown on wheat or clover fallow,) -		25 00
Additional seed wheat, 50 bushels,		45 00
Total debits, - -		$1355 02

Farm Cr.

Increase of wheat crop of 1158 bushels over the former 200, or 958 bushels at 90 cents, - -	862 20
Debits, - - - -	1355 02
Balance due, - - -	$492 82

Operations of the Sixth Year.

This will be the turning point, or crisis, of the farmer's labors for improvement. Though as yet scarcely any clear annual profit has been obtained, and the debt incurred has not been discharged, still the great difficulties of improvement have been overcome, and the heaviest costs have been paid. No clear or disposable income has yet been enjoyed. But the productive power of the farm, and its gross products, are already much more than doubled; and the net products increased in still greater proportion.

But the labors and consequent expenses of the new rotation, and of the better and more extended tillage, are also now increased greatly, though much less than in proportion to the increased production. One half, (or more) of the $360 before charged annually for marling, has already been given to other labors—and now all will be so diverted except one-fourth annually, (or $90) which will be ample for all continued marling for the next 10 years.

The growth of clover, by this time, will have greatly increased the products of live-stock, without the additional grazing having materially encroached on the manuring value of the vegetable products. Trampling the land, to some extent, will now be useful to compress the too loose soil—and also, close grazing, for short times, will do good in cleansing the land of both weeds and insects. Thus the clover field preceding corn might be grazed from April to June or July, and the two wheat-fields after being cleared of the wheat—and both with advantage to the next succeeding grain crops and to the clover. The increase of stock products may, for the present, balance any additional amount of increase of labor required for tillage, and not already provided for.

For the remaining five years of this first round of the six-shift course, there will be no further increase of crops claimed, beyond the before stated rates of 20 bushels of corn, 12 of wheat for both pea and clover-fallow, and 16 for the manured clover-fallows, now extended to 20 acres annually. At these rates, the 6th year's account will stand thus:

Sixth Year—Farm Dr.

Balance due at close of 5th year, - -	$492 82	
Interest, - -	29 57	
		$522 49
Other debits as before, -		430 00
Total debits, - - -		$952 49

Farm Cr.

Increase of wheat—present crop,		
50 acres pea-fallow at 12 bush.	600	
30 do. clover-fallow at 12 "	360	
20 do. do. manured at 16 "	320	
	1280	
Deduct former product 200, leaves 1080 bushels at 90 cents, - -		972 00
Debits, - - - -		952 49
Balance in favor of farm, - -		$19 51

At the end of 6 years, the farmer has now discharged the whole debt incurred, and paid all the expenses of so far enriching his farm. Under the mild rotation prescribed, the improvement will be permanent; and even progressive, as inferred, to a much higher mark of productiveness. The account stated for one more year will show the beginning of this new condition of things, which is supposed to continue, (or be thus averaged) through the current course, or to the end of the 10th year of the farmer's occupancy and improvement.

Seventh Year—Farm Dr.

Additional expenses as before, viz:	
Force formerly engaged in marling, and now mainly at other farm labors,	$360 00
Clover seed $25. Additional seed wheat $45, - - -	70 00
Total debits for additional labors,	$430 00

Farm Cr.

Increased product of wheat, over the the 200 bushels at first produced, 1082 bushels, at 90 cents, -	972 00
(Dropping the last year's balance due the farm of $19 51.)	
Debits, - - - -	430 00
On improvement operations—balance in hand, - - - -	$542 00

Thus, the operations of the year, after supplying $430 to pay for increased labors of tillage, leave a clear and disposable surplus of $542. The like (average) products will be obtained in each of the three succeeding years of the same first round of the new rotation, and reaching to include the 10th year of the farmer's labors. It is useless to continue to state the account for these years, and would be improper to treat the annual disposable surplus (of $542 at present) as an accumulating fund. The farmer has earned the right to expend this annual surplus for the greater comfort and benefit of his family, or may use a portion of it for any auxiliary means for obtaining still greater improvement and production of his farm. The general results of such means will hereafter be slightly touched upon. But without counting anything from such additional means—and only from those already employed, and the system in progress—looking to the still gradually increasing effects of marl (as usually experienced) for some 10 years after the application—the still growing supplies of prepared putrescent manures, and of enriching matter in the two green manurings in the course of crops—it will be moderate enough to suppose that with the second course of this rotation, and beginning with the 11th year of the whole labors of improvement, the farm will have reached (for the next round of crops,) the average production of 25 bushels of corn, and 18 of wheat, both on pea and clover-fallow. Then the grain products will stand thus, for the 11th year (as noted in the preceding table) and the course of the rotation reaching to the 16th year:

50 acres of corn, at 25 bushels, 1250 b. at 50 cents, - -	$625 00	
Former crop (on 100 acres) 1000 b. - -	500 00	
Increase, or surplus, 250 b. at 50 cts.		$125 00
100 acres of fallow wheat (pea and clover) 18 bushels, 1800 b. at 90 cents,	$1620 00	
Former crop, 200 b.	180 00	
		1440 00
Total annual increase, -		$1565 00

If, of this increase, $565 be added to the $360 before allowed for increased labor, making $925 in all, there will still remain an increase of clear annual profit of $1000. If the allowance for increase of tillage and other ordinary farm labor was too small before, the present increase (to $925) is large enough to compensate all deficiencies.

Still another large and new charge should now be made against the surplus products. Until the 7th year, the farmer received no remuneration for his personal labors and superintendence, except the subsistence of his family for the time, as in all previous time for the proprietor and his family.

Since the 7th year, the whole surplus income of $542 has gone annually to the farme without charge; and now suppose the same amount continued to be allowed, as the annual compensation for the farmer's personal services. This large deduction from the present annual surplus products of $1000, will still leave (1000—542=) $458 of clear profit, after paying every expense of past improvement of regular culture of the farm, and $542 as wages to the farmer, which is just as much as that whole amount more than the total surplus which the farm produced before its improvement—there having been then no surplus, after barely supporting the farm. Having allowed these liberal deductions, the actual intrinsic value added to the farm by its recent improvement may be fairly estimated at the sum which as principal would yield the annual interest of the entirely clear profit $458; which would be $7666. This amount, is the least possible fair appreciation of the increased intrinsic value of the farm, as capital invested, without regard to the present or the former market price. Doubtless, if the case supposed actually had existed in all its parts, the market value (or estimated selling price) of the land when improved would be as much below the intrinsic or productive value, as the former would have been rated above the latter in the first unimproved condition. Whether the farm then would have sold for the ordinary price of $5 the acre, or 5 cents only, (the last being as I estimate more than the then intrinsic value—) or whether it would now sell for but $8, or would command $30 the acre—will not affect the estimate of the amount and value of the annual gross and net products, and of the intrinsic value of the actual improvements already made.

All conjectural estimates are necessarily uncertain and doubtful. Of these, of course, I cannot *prove* their being sufficiently moderate for reliance on the conclusions. No one has yet gone through precisely such a full and unmixed course of labors for improvement, so that the entire scheme can be pronounced to be fully tested by experience. But there is no one application of labor, and no improvement, herein stated, with its costs and its products, that I have not found sustained in some parts of my own practice—and the results are not contradicted by any other experienced facts. The costs are put higher (for reasons before given,) and the profits of results lower than I have found in all judicious operations of this description. In the foregoing statements, it was a condition (which is not to be found in any actual practice,) that the farmer's labors for improvement were always judiciously directed, and were never omitted or suspended. Many omissions, and some interruptions of proper effort, many errors of inexperience, accompanied and impaired my like operations, and lessened or postponed the otherwise certainly available results. But however disjointed and injudicious may have

been the labors of myself and all other improvers by marling, I am confident that none of the means supposed in this writing, upon the like premises, or in proportion to the measure of other premises, have failed to produce particular benefits equal to those here deduced—and in most cases, more benefit, and in less time. Hundreds of the most judicious and experienced laborers in this still recent mode of improvement, by marling or liming, will sustain this opinion by their concurrent testimony.*

In the foregoing scheme of improvement, my directions in sundry particulars have been swayed from what was deemed the best course, by the supposed constraining circumstances of the farmer—and in others, to better preserve simplicity and clearness of description. To meet the most general objection of "want of money to pay for improvements," a case was supposed of a farm that could not spare for sale a bushel of corn, and a proprietor who had not a dollar more than would maintain him and his family through the year's labors. If these restraints had not existed, perhaps some more costly or more hazardous means for improvement might have been added, with great benefit, in increasing or forwarding the amount of fertility to be gained. In some other cases, some of the supposed means may be wanting, and may be supplied, though to less advantage, by other means. Some of these different circumstances will be hastily noticed.

If marl had not been accessible, lime would have done as well, at more or less greater cost.

On all corn land designed to have wheat next in succession, it would have been profitable to sow peas among the corn, as a manure crop.

If gypsum had been found effective, after marling, the small expense of its application ought regularly to have been given, for the leguminous manuring crops, clover and peas.

Guano might have been used on every wheat crop, and probably to great profit, at least so long as the land remained poor.

Bone dust in small quantity would probably have been profitable as manure.

These means I leave for others to estimate, either by their own experience, or the published and well-authenticated reports of experiments and practice of other farmers. I have but little personal experience of any of these manures which are commercial commodities. While not at all doubting the great benefit and profit of their use, I choose to limit my own estimates to subjects of my own experience.

* After these estimates were prepared, I submitted them to the careful scrutiny of three of my friends, who are judicious farmers, and well acquainted with the operations and results of improving land by marling or liming. One of these farmers was John A. Selden of Westover, whose testimony I am authorized to use thus in this case, and whose name will command respect as a voucher for any agricultural facts or opinions. There was not one of my supposed results of the premises stated—or of the rates of increased production from the previous applications of marl and other treatment of the land—that each of these farmers did not deem full low enough for the means employed. Each of them thought that in some particulars the supposed increased production was put too low. I am confident that the same general opinions would be concurred in by the great majority, if not by all, of the most judicious and experienced marling and liming farmers in lower Virginia.

For the estimated costs of means for improvement supposed to be used, I should be glad to refer to others' testimony also. But I know of no farmer, other than myself, who has taken the pains to carefully estimate the expenses of marling, and therefore, I could not have the desired aid of correcting censorship on this score. I am then solely responsible for the correctness of the estimates of expenses. Those of the costs of marling labors were carefully prepared, and are believed to be very correct. But the other subsequent and ordinary farm labors, growing out of the improvements caused by marling, were of amount and expense so much more conjectural than anything else assumed, that these particular subjects may have been estimated very incorrectly. But this is the least important particular of the general estimate—and also the one in which every practical farmer is qualified to judge as well as myself, and to detect and allow for any errors of my estimates.

For the Southern Planter.

JOINT WORM.

Mr. Editor,—I ask permission to occupy a small space in your forthcoming number with a postscript to a short notice of the joint worm, published in the September number at page 271. My principal object is to comply with a request made to me by Dr. T. W. Harris, the distinguished author of the "*Report on Insects Injurious to Vegetation in Massachusetts.*" Being informed, by means of a special communication which I had addressed to him, of the conclusions to which I had arrived with respect to the habits and true nature of the joint worm, he has done me the honor to express an interest in the result of my observations, and to offer very valuable suggestions as to the most efficient way of prosecuting my inquiries with a view to the confirmation or correction of those conclusions. As it happens that there is much confusion in the old nomenclature for this department of entomology, Dr. Harris is anxious that I should employ the names used in his published work. He requests, "In case you should send an account of the joint worm to Mr. Ruffin, or to any other person for publication, that you will be pleased to adopt the nomenclature for the gall-flies and their parasites, or supposed parasites, (whether all be so or not,) which you will find in Cuvier's Animal Kingdom and most other

modern books on entomology, instead of that originally proposed by Geoffroy, which I find in your communication. Geoffroy introduced much confusion in the names which he gave to insects, especially to such as these under consideration, and Latreille, himself, (who wrote the entomological part of Cuvier's great work, and who will long continue to be our principal authority,) saw fit to reject Geoffroy's names for these two tribes of insects, restoring to the gall-flies the name *Cynips* originally applied to them by *Linnæus*, and giving to the "Ichneumones minuti" of the latter (including several genera and sub-genera, such as eurytoma, &c.) the Fabrician name of CHALCIS. Hence Mr. Westwood and other distinguished European naturalists denominate the gall-making hymenopters *Cynipidæ*, and the other family *Chalcididæ*, and this nomenclature I have followed in my work. If you have occasion to speak of the gall-flies, your readers, who may perhaps have my book, will readily understand you, if you refer them to the genus Cynips, and will perceive no contradiction between us; and in like manner if you speak of the "joint worm" as a chalcidian larva (whether you adopt the name Eurytoma or Chalcis) you will avoid the danger of having it confounded with the true *Cynipidæ* from which it differs essentially in structure in its winged state. I am the more urgent on this point because any discrepancy in regard to names will be likely to mislead those who are not familiar with them."

The intelligent reader, by comparing the foregoing extract from Dr. Harris' letter with my communication published in your September number, will easily make the necessary correction of the nomenclature adopted in the latter. He should substitute for the term *Diplolepis* therein used as the generic appellation of the true or plant-sucking gall-fly, the old term *Cynips*, which had been originally applied by *Linnæus* to both the true gall-flies and their carnivorous parasites, but which GEOFFROY and LAMARCK had restricted to the latter, introducing the new name *Diplolepis* for the former. LATREILLE, on the contrary, followed by all later entomologists, has rejected the name *Diplolepis* altogether and has transposed the terms *Cynips* and *Cynipidæ* from the section of parasitical to that of plant-sucking gall-flies. In this connexion it is to be observed that in the first part of my communication I used the family name *Cynipidæ* in the *Linnæan* sense, as embracing both tribes of gall-inhabiting hymenopters, whereas according to the now accepted nomenclature it should have been restricted to the tribe which originally make the galls, the term CHALCIDIDÆ being adopted for those minute parasitical hymenopters which lay their eggs after the galls have been produced by the Cynipidæ and whose larvæ prey upon those of the latter. To this tribe of *Chalcidians* or parasitical gall-flies the eurytoma of the barley and wheat would appear to belong, if the classifications of naturalists founded on *artificial* characters be correct. The point I have made is this: the history of the joint worm, as far as it has yet been investigated, seems to show both that it feeds on the juices of the plant and that it is the larva of the *Eurytoma hordei*. In other words, this species of *Eurytoma* is not exclusively, if at all, a carnivorous parasite, and consequently the classifications of entomologists in respect to this group of insects must undergo a modification in order to be reconciled with the *natural* characteristics thus ascertained. The *Eurytoma*, or at least this species of the genus may, after all be a *Cynipian*, but then the *artificial* tests of this family will be somewhat different from those now generally assigned.

The same opinion has, as I learn from Dr. Harris, been heretofore advanced by Professor Nees Von Esenbech, but on grounds which were declared to be unsatisfactory by Dr. Westwood and Dr. Ratzeburg, both of whom controverted his statement "that he had become acquainted with some Eurytomas which were phytophagous," and, therefore, "more properly belonged to the Cynipidæ." Dr. Harris is himself now strongly inclined to adopt my conclusions. I have recently forwarded to him several specimens of the fresh and living joint worm, the examination of which by himself and Dr. Jeffries Wyman has served to confirm my account of the mandibulate character of the mouth of this worm. He is, therefore, satisfied that neither the yellowish white worm found in a large majority of the galls, nor the less common white, hairy worm, can be the larva of a *Cecidomyia*. "There still remain, however," he says in his latest letter to me, "some points in the economy of the insect that require to be settled before a complete account of its history can be written. We find that a large proportion of the winged insects are evolved in the spring, having survived the winter in the larva (or pupa?) state. Of course they will soon afterwards be engaged in laying their eggs in the young wheat that had been sown during the previous autumn. In this same wheat, during the autumn, we are not to expect to find any larvæ of the Eurytoma, or at most only a very few in a small number of cases. The young plants ought to be examined *before winter* to determine this point, namely whether they are *much* affected by the joint worm. If many of these worms are found in the plants it would lead to the suspicion that the larvæ so found were not those of the *Eurytoma*; and on the other hand, if their occurrence in the young plant in the autumn is rare, it would afford additional ground for belief that the "joint worm" was the larva of the *Eurytoma*. When the insect is engaged in laying its eggs opportunity may be found to watch the process, to mark the plant, and to examine carefully the spot where the *Eurytoma* had been at work. If this spot be found not to contain larvæ already it will give further evidence that the *Eurytoma* is not a parasite."

I have given this passage at length in order to invite the co-operation of any of your readers in the infected region who may feel an interest in determining the history and true nature of these destructive insects. If any indications of the disease be perceived in the young wheat during the fall or winter I would be glad to receive specimens. My present very decided impression is, however, that none will be found, and that the first signs of the disease in the new wheat appear in the spring coincidently with the emergence of the winged Eurytoma flies from the straw and stubble of the previous year's growth.

J. L. CABELL.

University of Virginia, Sept. 24, 1852.

For the Southern Planter.

DEWS AND FROSTS.

Mr. Editor,—So intimately connected with agriculture are dews and frosts—the one favoring, the other opposed to the growth of plants—that I have presumed to trouble you with a short communication in regard to them. I write in order to induce your readers to disregard the scholastic aspect in which their connexion with science would seem to place them and to persuade them to investigate dews and frosts as the results of simple natural laws, as well as to assist them in their investigations. As the earth is not only the theatre of action for those laws, but also the observatory for ourselves of this action, we ask your indulgence while we premise a few facts, more or less connected with the matter before us. As the temperature of the earth is the prime agent in the formation of dews and frosts, we will observe that, apart from any result of chemical decomposition, temperature has two sources. One the heat radiated from the sun, the other "sui generis" and a peculiar property of this ball of matter. The surface of the earth, for the depth of forty feet, is warmed by the radiated heat of the sun, and its temperature is subjected to the control of atmospheric vicissitudes. At that depth, there is a stratum called the stratum of invariable temperature, that is to say, the heat is the same at that distance below ground both winter and summer. Here the influence of the sun on the earth's temperature ceases, and here commence the operations of a peculiar law, known only by its effects; for we here find that in proportion as we go deeper, in like ratio the temperature increases; and philosophy has determined a point in the bosom of our common mother, in which it is impossible for anything to exist as solid, and has taught us the interesting fact that we live on the hardened crust of a vast ball of liquid fire. This fact we now lay aside, having mentioned it for the purpose of separating it entirely from the other source of the earth's heat, viz: the sun. But before we go farther, let us be understood as to the meaning of radiation, a term we have used, and for which we expect to have farther use. Radiation, as we use it, is that property by which a heated body gives off its heat to another contiguous body without contact with such body. It differs from reflection in this: that radiation requires that the body radiating shall itself be heated, while reflection is as complete from a cold body as from a body of raised temperature. Now the law governing radiation is this: "All bodies radiate or give off heat to surrounding bodies, and in return, receive heat from contiguous bodies." For example, suppose two bodies, A and B, to be placed contiguously; A will give off its heat to B and receive heat from B, while B will give off its heat to A and receive heat of A; if these two bodies be of equal temperature in the commencement, they will continue so; B giving to A as much heat as A gives to B; but should there be, in the commencement, an unequal temperature between the two, for instance, should B have more heat than A, then "as the radiation is always in proportion to the temperature," B would radiate to A more heat than it receives from A, and thus an equality of temperature would be established. We have been thus minute in regard to this law, because on its right understanding, depends the proper appreciation of all that follows. The sun, we have said, is the main source of the heat of the surface of the earth. Its rays radiate from it as from a common centre all over the earth, and in return, the earth radiates its heat back; but the temperature of the sun being so immensely higher than that of the earth, obediently to a law before mentioned, the earth receives more heat from the sun that it gives in return, and thus its temperature is raised; this goes on during the whole day—to the greatest extent when the sun is at meridian, for then the rays strike the earth directly and very few are reflected. Towards evening, as the rays fall obliquely, some are reflected, that is, thrown from the surface of the earth into space. The earth continuing to give off its heat more abundantly than

before, (because its temperature being raised, its radiation is greater,) neccessarily has its temperature lowered; and when the sun has gone down, receiving no heat and continuing to radiate, its temperature is at last so reduced that it is lower than that of the superjacent air, which condensing as it comes in contact with the earth, deposits its vapor, held before in solution, upon those bodies which, being the best radiators, have parted with the most heat, and consequently are the most reduced in temperature. That vapor condensed, is known under the common name of "dew." Having thus mentioned the principles of its formation, we beg your indulgence while we shall name some of the peculiarities of its formation. As the most superficial observer cannot fail to have observed that often on one morning we have not a drop of dew, and on the next, have it in abundance, and may have wondered at this seeming mystery as he thinks it, we will use the principles we have just inculcated to explain this simple, yet often perplexing fact. Let us lay down some law as a criterion by which we may judge the exceptions; in other words, let us state those conditions of air, earth and sky most favorable to the forming of dew, in order that we may better be able to detect any deviations from those conditions. A clear, hot day, followed by a clear, calm night, is the most favorable condition for the formation of dew. And why? Because during a clear, hot day, the rays of the sun have nothing to prevent their direct passage to the earth, and a clear, calm night offers no impediment to the rapid radiation from the earth. These being the most favorable conditions for the formation of dew, we can well see how there is no dew on a cloudy night. For this there are two reasons: first, a canopy of cloud prevents the heat, radiated from the earth, from rising; second, the clouds themselves radiate heat towards the earth at the same time that the earth is giving out its heat, and receiving heat in return for that given out the earth has not its temperature sufficiently lowered to cause the formation of dew on its surface. It is observed that no dew falls in windy nights. Why so? Because as the earth gives up its heat, it absorbs heat from the atmosphere to a sufficient extent to lead to the deposition of dew, provided the atmosphere be still. If, however, the air is in motion, the dew is evaporated, in other words, absorbed by the air as fast as it is formed. And thus it is all of radiation and absorption on the part of the earth; nothing of condensation on the part of the air. Another reason why a hot day is favorable to the formation of dew is that evaporation goes on most rapidly on such a day, and the atmosphere receiving more vapor more easily condenses it. Again, it has been noticed that a calm night preceded by a windy day is favorable or not to the formation of dew as the wind has blown over a dry plain or a body of water. If the latter, then bringing a bountiful supply of moisture, it places the atmosphere in the best state for condensation. If over the plain, it not only does not bring any moisture, but deprives the atmosphere of a large portion of its vapor. Having thus noticed a few prominent facts we cannot refrain adverting to the beautiful harmony and order displayed in the operations of Nature. It is a universal law, so far as we know, that the property of absorption and radiation exists in a corresponding ratio. And how beautifully is this law exemplified and practically improved in Nature. What needs the most heat on the earth's surface? Growing vegetation. What the most dew? The same. And we find plants absorbing more heat and having more dew deposited on them than any other objects. And herefrom we deduce an unanswerable argument in favor of close, deep and perfect tillage. For in proportion as we make our soils porous, their power of absorption is increased. The power of absorption and radiation existing in a like ratio, in the same way their power of radiation is increased; and the deposition of dew on a surface being proportionate to the amount of radiation, as close tillage promotes absorption and radiation, it likewise causes the deposition of dew, and he who wishes this grateful drink for his thirsty plants must plough and break completely.

Frost is frozen dew, and as the above are the laws of its formation, I need say nothing more of it.

WM. HENING.

Richmond, August 31, 1852.

TO KEEP OUT FROST.—Saw-dust, tan-bark, or chip-manure, either are better than any kind of soil to keep out frost. Straw and old hay of any kind are better for banking around houses in winter than loam or sand or gravel.—*Massachusetts Ploughman.*

From the Richmond Whig.

FINE VIRGINIA WOOL.

I am sure, Messrs. Editors, that whatever contributes to the improvement or honor of this "old Commonwealth of ours," will be a source of gratification to you, who have so seduously labored for her welfare for so many years. And to show that we can, in some respects, and in some of the branches of industry, rival our sister States, I hand you an extract from the United States Economist of the 2d October. The editor of that paper says:

"We have seen a few bales of Saxony fleece (wool) at H. A. Petitbone & Co's. Beaver street, from the farm of Mr. Dox, of Nelson county, Virginia, superior to anything we have before seen. Duchess county, New York; Washington county, Pennsylvania; and Summit county, Ohio, will have to be up and doing, or Virginia will carry the flag. We hope our Virginia friends will improve the hint thrown out some time since, (referring, I believe, to the scarcity of provender,) and come North and make a selection from some of our flocks, where the drought has destroyed so much of the fodder it will be difficult to winter them."

This was a lot of twenty-five hundred pounds of wool, sent from Nelson county to our friends, Messrs. Deane & Brown, to be sold here under limits. Forty-five cents per pound was offered for it, in cash, being "Buck Washed." That price not being equal to the expectation of the owners, it was shipped to New York, where it was seen by the editor. The sheep from which this wool was taken was a flock of nine hundred, I understand, driven from New York to Nelson county, and proves most conclusively that there is scarcely any investment so safe and profitable to our mountain farmers as the raising of sheep. No animal can live upon as little, and requires less attention than a sheep, if it has a dead pasture to roam in, or the woods of the mountains.

RICHMOND.

We know Mr. Dox very well, and saw him only a few days ago. He has been here now several years with his sheep, and thinks since they have become accustomed to our climate that they are quite as good as the Merino, commonly supposed to be a more hardy sheep.

We hope that in some short time he will give us an article on the subject, drawn from his own experienc and observation, both here and in New York, and as we endorse him in every way, we can promise in advance a good and reliable article on the subject.

The following communication was received sometime ago. We did not think the season a good one to publish it in, and we reserved it until the present time, when we hope every one can follow the advice given by the writer without interfering with other arrangements:

For the Southern Planter.

MANURES.

Mr. Editor,—This is truly an important subject with the agriculturist; in proof of which we have only to bring to mind the imposing fact that thousands of dollars are annually expended for that active, generous, masterpiece, guano. Again, refer to the numberless advertisements of artificial "Manufactured Manures." A with his "Artificial Guano"—B and K have the "Prepared Guano"—C his "Fertilizer," *annually improved*—K and D bring out their "Highly Valuable Chemical Salts"—W C the "Highly Approved Poudrette"—T his "Fertilizing Compound." To carry out the list would fill the greater part, if not every page in your valuable journal. All of those above can be obtained for the *hard cash;* but, alas! the farmer often finds himself in a "sail predicament"—money gone—no benefit derived from these "highly valuable manures," which are declared to contain every ingredient necessary for the production of remunerating crops; and better still, enough of these beautiful invaluable ingredients are to be left in the soil to secure a "good stand of the grasses and clover on the poorest soils;" nothing remains to carry out the improvement but the application of plaster and lime, thereby bringing the soil to a high state of fertility. It is unnecessary to affirm that these manures do not invariably give these results, as the past conclusively proves that failure as often attends their application as success. The first, guano, has especially been a source of great improvement and profit to the farmer; but to the agents, speculators and manufacturers there are no failures; *their profits are sure and enormous.* The farmer's hard earned capital is frequently lost to him, whilst the vender and manufacturer secure their gains. The nostrums for impoverished soils are as plenty as those for the restoration of the health of the human family, and in too many instances as worthless. As farmers are engaged in the liberal use of guano and manufactured manures, the question naturally arises, have the farmers of Virginia diligently and carefully husbanded every material that can be converted into manure?

We frequently see Yankee "axe helves" and "Northern hay" advertised in our daily papers. Have we not a sufficiency of good timber that can be worked into axe helves? or are we too lazy? or is it the *beautiful crook* of the Yankee helve that "takes our eye?" Have we no soils suitable to the production of the grasses and clover? or are we deficient in energy, that we have not only to purchase axe helves and hay, but manures from the North?

The writer has made experiments with guano, resulting in complete failures and again returning remunerating crops. With fifteen dollars worth of "C. Fertilizer" I made *nothing*. I consider it a perfect humbug. Whilst farmers are engaged in the liberal use of these manures, let them not forget the quantity of materials on their right and left, that if properly collected, intimately mixed, carefully husbanded, and judiciously applied, will not only add greatly to the fertility of their lands, but fill many an "empty purse." Manures are the riches of the fields, and as stable manure contains all those substances which plants need, and as it is a settled point in agriculture that it never fails, let us first consider the means necessary to increase not only the bulk but secure and improve the quality. Horse dung rapidly accumulates in our stables; do not permit it to remain until it is two or three feet deep, and then fork it out in front of the door, exposed to the influence of sun and air, to be drenched by every fall of rain, and then cart it to the soil almost a worthless thing; but provide liberally good bedding for your horses and mules, remove every morning the dung and wet straw to an adjoining shed, erected for the sole purpose of securing your manure, there deposit it, dusting the daily removals with plaster, thereby securing the volatile particles. When you have a sufficiency to put up a good compost heap, commence it immediately *under your shed*, by placing alternately mud, woods-mould, manure and plaster, adding a strong dose of good brine (composed of one gallon of salt to eight of water,) to each layer of manure and plaster; complete the heap by covering with mud or scrapings; permit it to remain so until a slight fermentation takes place, then cut down the heap with sharp hilling hoes, thereby intimately mixing the materials, cart it on the land intended for cultivation, covering it with the plough as fast as it is *regularly spread*. An excess of fermentation should be avoided in the heap; the *soil is the place for it to take place*, as the volatile and soluble particles are there secured for the wants of the crop. The mud and mould add to the bulk whilst they do not injure the quality of the heap; the plaster arrests and fixes the escaping ammonia; the brine will destroy the enemies of our crops. Manure of this kind should be laid on moist, tenacious soils, the faults of which it corrects, while at the same time the soil checks the too violent action of the manure; on the other hand, if applied to dry sandy soils, it then forces and stimulates the growth of plants so much in the early stages of their development, that when the action ceases, the process of vegetation becomes feeble.

Barn-yard Manure.—Many farmers barely secure the droppings of their cattle, whilst others, with an eye to the comfort of their stock, and the securing and increasing of the manure, erect good sheds, liberally provide bedding, by carting corn-stalks, leaves, straw and scrapings in the yard; frequently applying plaster, with a heavy hand, over the contents of the barn-yard. This manure is peculiarly adapted to dry warm soils.

Sheep Dung.—Alas! how few of the farmers of Virginia make any provision whatever for increasing and securing this truly valuable fertilizer. The sheepfold should have regularly carted in either straw or leaves, good sheds erected, open to the south; here use plaster, salt, or pulverized charcoal over the litter. This manure is exclusively adapted to moist, cold, tenacious soils, as it often proves injurious to dry, warm soils, if applied in large quantities; yet it may be laid on moist, tenacious lands in large quantities without occasioning any inconveniences whatever.

Hog Manure.—What a vast quantity is to be seen completely thrown away. To render the hog more valuable, he should be either kept in a close pen, which should be regularly littered and cleansed through the year, or if the farmer prefers his "having the range," lay off and fence in one or two acres in your field at fallow, cart in leaves and scrapings regularly, here feed your hogs, shut them up at night, let them remain a few hours in the morning after feeding, and you will not only secure a goodly number from the clutches of the rogue, but you will also get a great deal of excellent manure. When taken up to fatten, put up in good floored pens, provide plentifully mud, scrapings, litter, leaves, &c.; clean out weekly; put up a compost by mixing with woods-mould and plaster. When your hogs come to the knife, they will nearly have paid in good manure for the food consumed. This manure acts more advantageously on warm soils. Now secure the contents of the privy; cart woods-mould and leaves to a *log pen* at every negro cabin, and require them to empty all the dish water, contents of chambers, soapsuds, ashes, sweepings of the houses and yards, spreading with a bountiful hand plaster two or three times a week on the contents of these pens, and if you cannot secure enough manure to apply *liberally broadcast* to every acre of cultivated soil, then purchase, if you have the capital. Always remembering that lime must form the basis of all improvement, without which no permanent improvement can be effected.

Your obedient servant,

T. E. B.

Sussex county, Virginia.

For the Southern Planter.

DIALOGUE.

Mr. P. D. Bernard: *Dear Sir*,—One of the oldest subscribers to the Southern Planter offers his congratulations on the prospect which appears to be opening, of a *living* reward to your patient and faithful labors. I rejoice to see that the agriculturists of Virginia are awakening (slowly though it be) to some sense of justice to you and to themselves. But your subscription list is yet ten or fifteen thousand short of what it ought to be; and the farmers and planters of the State will, I trust, esteem it a duty and a pleasure to add speedily as many more names as can be obtained. If each one of them will do what he can, the work will soon be accomplished.

Circumstances not necessary to mention, have made me acquainted with every prominent agricultural journal published in the United States, and I do not hesitate to say that the Southern Planter is now worth more to us than all of them together. Yet more money is sent out of the State every year to pay subscriptions to them than would support your paper, which has probably not one dozen subscribers north of the Potomac. We complain of being tributary to the North; but in this as in other things the tribute is voluntary. When will our people be true to themselves? Not long since, I met with a young farmer and we were joined soon after by an old farmer—one of the best too, and one of the best men in the county—when the following conversation ensued:

Young Farmer. "Good morning Mr. A.; I am glad to meet with you—having reflected much on your maxim that every farmer should aim first at producing all that the consumption of his farm requires, as far as may be, and among other things am endeavoring to raise my own pork. What was the paper you advised me to take to aid and improve me in this and other matters of farm management?

Old Farmer. The ——, by all means (naming a Northern agricultural journal.)

Subscriber. Why, Mr. A. I thought you took the Southern Planter, and so must have seen the excellent article entitled "A dollar's worth about hogs." It is well worth twenty years' subscription.

Old Farmer. I did take the Southern Planter. You were kind enough to subscribe to it for me some time ago, and I liked it very well; but somehow I let the subscription run out, and afterwards the other paper was recommended to me, and I took that; consequently have not seen the article you refer to.

Subscriber. Well, Mr. A. permit me to inquire whether you have found your advantage in the change of papers?

Old Farmer. I don't know, never thought much about it. Those Northern folks are so smart, and their papers have so many little articles about every thing, it is quite entertaining.

Subscriber. But have you found any of those amusing little articles, or anything else in the paper of practical value? has it improved your system of farming, your land, or your crops?

Old Farmer. Can't say that I have, never thought much about it. Many of the things recommended are not calculated for us—have tried some of the experiments, but did not get paid for it—have sent on and bought some of their famous ploughs and other implements, but have not found them better than those we have at home, though they cost me a good deal more—so I am just jogging on in the old track.

Subscriber. You are not aware then that the Southern Planter is now edited by a practical Virginia farmer—sustained by contributions of the ablest and most distinguished agriculturists in this State or the United States. That every page of it contains matter for home consumption, together with whatever can be gleaned from Northern journals of any value to us; and yet that it has probably not as many Virginia subscribers, and send their money out of the State for other papers?

Old Farmer. No, I know nothing about it, never thought of it; but I feel that I have not done justice to my State, the paper, or myself, and when my subscription runs out, I'll go back to it.

Subscriber. Why not do it now? one more dollar will not hurt you—you have sent many out of the State; keep them in future here, and get the benefit as soon as possible of the valuable articles in the Planter.

Old Farmer. I will do so, and without delay.

Subscriber, to the Young Farmer. Let me now, as a friend and neighbor, appeal first to your interest and then to your State pride, in the choice of a paper. I am going to Richmond and will be the bearer of your dollar to the Southern Planter; and farther, if at the end of the year you are not more than satisfied with it, I pledge myself to refund the subscription I have induced you to make.

Young Farmer. I thank you, and will do what I now see is the duty and the interest of a Virginia farmer—here is my dollar without condition. We have so long paid tribute to our Northern brethren that the habit has become a sort of second nature. If they were to "offer us wooden negroes for sale, I verily believe our people would buy them."

I have given you substantially what occurred with three Virginia farmers, and have no doubt that like the old one of the party, most of those who give a preference to the Northern journals—never think about it.

An Old Subscriber.

Henrico, October, 1852.

THE SOUTHERN PLANTER.

RICHMOND, NOVEMBER, 1852.

TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

☞ Subscriptions may begin with any No.

☞ No paper will be discontinued, until all arrearages are paid, except at the option of the Publisher.

☞ Office on Twelfth, between Main and Cary Streets.

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☞ Communications for the Southern Planter, upon *other than business matters*, may be addressed to the Editor, FRANK: G. RUFFIN, Esq. at *Shadwell, Albemarle Co., Va.*, which will insure their being more speedily attended to.

BUSINESS LETTERS will be directed as heretofore to "The Southern Planter," Richmond, Va.

☞ Postage prepaid in all cases.

TIMELY WARNING.

All subscribers who do not order a discontinuance before the commencement of the new year or volume, will be considered as desiring a continuance of their papers, and charged accordingly.

PREMIUM CROPS OF WHEAT.

When we read in the "Rural New Yorker" the annexed statement of the premium wheat crops of its State, it occurred to us that our friend John Marshall, Esq. of Fauquier, had exceeded the two last crops mentioned. It will be seen by his letter, which follows the extracted article, that we were right in our supposition, and that when the very much less expense of cultivation and harvesting is considered, he will appear not to be far behind Mr. Hotchkiss himself, whose crop is truly said by the Editor of the Rural New Yorker to be one of the most remarkable and profitable on record, though undoubtedly made at a very heavy expense.

Mr. Marshall says that he does not consider his crop at all remarkable for his section of country—a very fine district it is—and we do not cite it as such, but only to show that what our good farmers regard as good cropping seems to be rewarded with second and third premiums at the North:

"WHEAT CULTURE.—PREMIUM CROPS.—Those of our readers who have not ready access to the last volume of the 'Transactions of the New York State Agricultural Society,' may be benefited by a summary of the premium wheat crops therein reported, and a condensed account of the valuable statements of the mode of culture which resulted in their production. And, to none of our farming friends will it be without interest to review the practice pursued by several of our most successful farmers, in growing the great staple crop of this section of the country.

"The first premium of $20, was awarded to William Hotchkiss of Lewiston, Niagara county, for six and three-fourth acres of wheat, harvested in 1850, averaging sixty-three and one-half bushels per acre. The soil upon which it grew is described as mostly black loam; the remainder, from one to two acres, of a gravelly soil. The previous crop raised on the field was wheat, harvested in 1848, yielding about twenty bushels per acre—no manure was given for several years previous, except what was furnished by breaking up the clover meadow which occupied the ground, and the wash from the public road which lies above it.

"This field was first ploughed in the fall of 1848, then cultivated and harrowed in June, 1849, and cross ploughed and harrowed again in August. Then upon two and a half acres at the west and gravelly part of the lot, fifty loads of well rotted barn-yard manure were applied and ploughed in, in six-pace lands, the last of August. Forty bushels of slaked

lime were then spread over the field and thoroughly harrowed in. The quantity of seed sown, was two bushels per acre. It was drilled in on the seventh of September, and the field was then furrowed out and the water courses kept clear through the season. The yield, as before stated, was 63½ bushels per acre, or 385½ bushels for the whole field. The net value of the wheat was $1 per bushel, and the expense of cultivation, exclusive of manure, lime and seed, is estimated by Mr. H. at $47 05, and at a wide estimate for these, a profit is shown of more than $250 on the whole crop. The Soule's variety of wheat was grown in this instance.

"This, on the whole, is one of the most remarkable and profitable crops of which we have any record.

"The second premium of $15, was awarded to S. L. Thompson of Setauket, Long Island, for forty-four bushels and twenty-four quarts per acre of Australian wheat. The field (of two acres) was a sandy loam, somewhat exhausted by previous cropping. The crops previous to the wheat were two crops of corn manured in the hill, followed by oats without manure. Thirty loads of barn-yard manure, and one hundred and fifty pounds of Peruvian guano, were applied per acre; and a bushel and twelve quarts of golden Australian wheat, sown broad-cast, on the 23d of September, 1849, and harrowed in. The yield was as above stated, but a measured bushel of the grain weighed 63½ pounds, and the estimate is made by weight. The expense of cultivating the crop, seed, manure, &c. included, was $49 82½ per acre. The wheat was sold for seed at $5 per bushel, and the straw was worth $5 per acre. At the market price, $1 25 per bushel, the profit on the crop would amount to only about $20 per acre, but an allowance should be made for unexhausted manure which would benefit succeeding crops.

"The third premium of $5, was awarded to Justus White of Jefferson county, on four acres of Genesee Bald wheat, producing forty and one-half bushels per acre. His land was a black, gravelly soil, ploughed three times and well harrowed,—manured with twenty-five bushels of barn-yard manure per acre, ploughed in at the second ploughing. Two bushels of seed were sown per acre on the 4th of September, 1849, broad-cast and harrowed in, harvested on the 25th of July, and yielding at the rate above stated. The expense account is rather imperfectly made out, so that we cannot found any calculations of comparative profit on the result.

"The wheat drilled in gave the largest yield. The limed land gave the greatest product. Here is one argument in favor of drilling in wheat, and of the application of lime to the soil, and many other instances could be brought to substantiate their value. Rich, well manured soils, and thorough preparation and culture, are required to produce large and profitable crops of this, or any other agricultural product. Let the lesson be heeded by those who would live by the plough."

—

Oak Hill, Fauquier, Oct. 8, 1852.

F. G. RUFFIN, Esq.—Dear Sir,—I owe you an apology for delaying so long to answer your communication of the 2d of September. While it affords me pleasure to furnish you a statement of the yield of my crop of wheat to which you allude, permit me to say that I do not consider it remarkable for this region of country, and that I deserve no particular commendation for the result. Without further preliminaries, I proceed, in as few words as possible, to the subject in hand.

The field (a good clover lay of two years' standing) was broken in August, 1850, with heavy three-horse barshare ploughs which turned the ground to an average depth of from 7 to 8 inches, throwing a beautiful furrow of 14 inches width. The ground, without having been previously harrowed, except in a few cloddy places, was then laid off in 18 feet parallel lands at an acute angle with the original ploughing, and the wheat put in,—the north-western sides of the hills with keen double shovels,—and the residue with heavy harrows and carefully lapped. The wheat sown upon about thirty-four acres of the field was nicely cleaned *blue-stem white*. That sown upon the remaining six acres was the old fashioned *purple straw*;—both at the rate of two bushels to the acre. The seeding was finished on the 11th, having been commenced on the 8th of October.

The following year, as soon as practicable after harvest, it was ricked carefully; and in the fall, upon being threshed, it was found that 34 acres of blue-stem white wheat yielded, *in the rough*, that is, after running it *once* through the fan and heaping the half bushel, just 900 bushels of beautiful bright wheat which weighed in the mill, after one more cleaning, 64 lbs. to the bushel. The yield of purple-straw wheat, from the residue of the field, estimated years ago, by my father who was an accurate practical surveyor, at six acres, was 267 bushels, in the rough, (or 47½ bushels of sixty pounds weight.) It is proper to remark here, however, that this six acres was some of the richest land in the field, but had had only a few ox-cart loads of stable manure put upon it immediately preceding the seeding of the crop. The aggregate yield, therefore, (1167 bushels on 40 acres) will be found to have been about 29 bushels to the acre; but owing to the fine quality of the wheat, it turned out, in the mill, *by weight*, a fraction *over* 29½ bushels to the acre. The field was not gleaned. I think I may safely put the yield, therefore, at 30 bushels per acre for the entire 40 acres.

As to the previous treatment of the land, I will add that it had been in a regular course of cultivation for years;—that no guano had been applied to it; and only about one hun-

dred ox-cart loads of stable and farm-pen manure previous to the original ploughing. The clover-lay was allowed to mature itself properly before any stock at all were turned upon it; and then a sufficient number of cattle were put upon it *to trample the clover and consolidate the ground* in a time much shorter than would have been required for the same number *to have grazed it off*. Three pecks of plaster of Paris to the acre had been sown on the land in the spring of 1850; but *none* was sown either *with* the wheat, or *upon* it.

I have now given you, according to your request, a statement of the yield of wheat on the field you allude to, and of the course of treatment and cultivation which conduced to its production; and when at leisure, it will give me pleasure to communicate with you, again, upon agricultural subjects.

Very truly, yours,

JOHN MARSHALL.

AN EXPERIMENT IN STALL FEEDING.

A friend in Loudoun has requested us to republish the account of an experiment in stall feeding made by us in 1848, and reported to the Hole and Corner Club of Albemarle. We give it below; and will add to what is there stated that we have other records of similar experiments carefully conducted which sustain the conclusions of the one here given in regard to the comparatively small quantity of food required to fatten animals so treated.—We will further state that on one occasion we selected the best ten of a lot of thirty-two beeves, and put them in an open enclosure with the choice of a good shelter in the month of November, they being intended for immediate consumption, two a week. The balance were housed as usual. When we had killed out six of the ten the order of the remainder had become so inferior as compared with the house-fed beasts, that we were compelled to resort to them for our supply, putting in a pair of the four once a week in place of a pair removed from the house. And, what may be deemed very remarkable, and a conclusive proof of the superiority of house-feeding over field-feeding, the four, though "tops" when separated, had so fallen off as to be unfit to kill until the middle of March, and were even then very decidedly the "tail" of the house-fed lot.

We do not say that this mode of feeding is the best under all circumstances. Cattle are said to "drift" more in consequence of the confinement, though we are not certain of the fact; and the price of labor, the distance to which the corn has to be hauled for grinding, the expense of getting out the manure and other more or less obvious considerations must decide the question for each man. But we do not hesitate to affirm that it is the mode to make the most beef out of the least food, and well worth trying by the stall-feeders in Loudoun and Fauquier.

—

A REPORT ON THE FEEDING AND SALE OF EIGHTEEN BEEVES,

Made to the Hole and Corner Club, No. 1, of Albemarle, by request.

Stock cattle were so high last year in the Valley and the mountains beyond, that I determined to procure my supply at home. I bought accordingly thirty-three bullocks, of various sizes and ages, at prices ranging from $8 to $24, the whole averaging $13 22. Besides these, I had six of my own, making a total of thirty-nine. One I killed, and selected eighteen of the rest to stall feed for the early spring market. I averaged the eighteen at $16 16¼. I could not afford to pay for building the stable to accommodate them; and owing to the backwardness of my wheat seeding, and to an unusually heavy crop of corn, on a much larger surface too than I commonly till, it was so late before I could commence building it with my own hands, that it was not finished till the 15th of December. So that my cattle ran out until that time, and when housed they were all losing flesh, a very unfavorable circumstance; some of them were quite thin, and only a few fat enough for my purpose. But I was encouraged to feed them by the cheapness of grain and the low price at which they were bought, and by confidence in the mode of feeding I proposed to adopt.

In stall feeding I consider that perfect quiet is necessary; that each bullock should have a spacious stall to himself, which, when once put up, he should never be permitted to leave, until two or three days before setting out to market; that light and cold should be excluded; an abundance of fresh water be always at hand in a trough; the most rigorous punctuality both as to time and quantity exacted in feeding; the stall kept well littered, both for warmth and cleanliness, and to make manure; the food removed as soon as he has finished his meal; and the trough kept sweet and clean. I complied with these requisites except in one particular; the plank of the stable was nailed on perpendicularly, and being green large cracks were left between each plank, and there was no loft: this made it much too light and cold.

At the end of eighty-four days nine of them

were sent to Richmond and sold at $7 50 per cwt. net; they weighed 647 7-9 lbs. Twenty-eight days afterwards the other nine were sent to Washington and sold at the same price; they weighed 556½ lbs.

Classing them in lots, as they were sold, I submit the following statements—first, of their consumption; and second, of the cost and profit of the whole operation:

DAYS.			
First Lot of nine, fed eighty-four days, as follows:			
65	1½ bushels of corn meal per day	} i. e. 2 wine gallons to each of the mixture,	113 12-16 bus.
65	1½ " flax seed meal per day		16 4-16 "
19	1 5-16 " corn meal "	} 1½ gallons to each of the mixture,	24 15-16 "
19	3-16 " flax seed meal "		3 9-16 "
84	1 " wheat bran "	1 gallon to each,	84 "
84	6¼ " turnips, pumpkins and cabbages, per day, 3 pecks to each,		567 "
46	shucks, top-fodder and wheat chaff at discretion.		3420 "
38	90 lbs. of sheaf oats per day, 10 lbs. to each,		
Second Lot of nine, fed as above for eighty-four days, afterwards as follows:			
28	1 5-16 bushels of corn meal per day	} 1½ gallons of the mixture to each,	36 12-16 bus.
28	3-16 " flax seed meal per day		5 4-16 "
28	1 " wheat bran "		28 "
28	6¼ " green food "		189 "
28	90 lbs. of sheaf oats, "		2520 lbs.

I kept no account of the long food given them except the oats. Not having any hay, it consisted entirely of shucks, tops and chaff, for forty-six days, when I commenced giving them sheaf oats, gradually at first, and increasing it as they showed less appetite for the shucks, &c. The oats were somewhat damaged, and I have charged more than I think they ate, because in making a statement which may influence others, it is proper to make it *against* myself.

Their long food was chopped fine and sprinkled with the meal and bran *in* the trough. The green food was cut up also. The meal and flax seed were ground together in the proportion of one to seven. The remnant of each feed was given to my work oxen, and paid them for hauling the litter.

The shucks, tops and chaff are not charged against them, because they are worth no money. The labor of having the corn ground is offset by the difference in favor of the meal; and that of making the turnips by the superior tilth of the land that produced them, its better take in clover, and the probable increase in the crop of oats now growing upon it. The pumpkins grew in my corn field, and cost nothing; and enough were fed to hogs to pay for gathering and storing. The value of the cabbages is estimated according to the supposed product of the land in corn, say 12 barrels, worth $24, less the value of cabbages sold, or $15, which makes them worth $9, which sum, for convenience, I shall divide between the two lots. The hand that attended them I have charged at a hire of $6 per month, a reasonable rate for the season of the year.

With this explanation, I proceed to state an account with each lot.

First lot of nine beef cattle in account with F. G. R.

1848.			
April 1.	To gross sale at Richmond,		$429 30
	To 44 loads (ox-cart with 4 steers) manure, at $1 per load,		44 00
			$473 30
By purchase money, $183, and interest from 1st of October, 1847, five months, $4 57½,		$187 57½	
By expenses attending sale,		26 45	
			214 02½
By 130 11-16 bushels, say 27½ barrels corn at $2 per bbl.		55 00	
By 20 bushels flax seed at 90 cents per bushel,		18 00	
By 84 bushels wheat bran at 6¼ cents per bushel,		5 25	
By 567 bushels green food, explained above,		4 50	
By 3420 lbs. oats at 40 cents per cwt.		13 68	
By salt,		1 25	
By hire of hand at $6 per month, half paid by this lot,		9 00	
			106 68
To balance,			$153 59½

Second lot of nine beef cattle in acc't with F. G. R.

April 24.	To gross sales at Washington,		$375 38
	To 65 loads (size as above) of manure,		65 00
			$440 38
By expenses attending sale,		$52 92	
By purchase money, $108, and $3 24, six months interest on same,		111 24	
			164 16

By 175 7-16 bus. say 35 1-10 barrels of corn, at $2 per barrel, - - - -	$70 20	
By 25 bushels flax seed, at 90 cents per bushel, -	22 50	
By 112 bushels wheat bran at 6¼ cents, - - -	7 00	
By 5940 lbs. of oats, at 40 cts. per cwt. - - -	23 76	
By 756 bushels green food,	4 50	
By hire of hand as above, half of last month given to other cattle, - -	12 00	
By salt, - - - - -	1 75	
		141 71
To balance, - - -		$134 51

Thus it appears that I have made $288 clear money on the whole operation, or $177 (an average clear profit of $9 28) over and above the manure, which is generally considered to be of itself a sufficient remuneration for stall feeding. This large balance is partly due to the low price of grain, and partly to the cheapness of my cattle. The feeding I think was heavy, but rendered necessary by the incompleteness of the house, the comparatively low order of the cattle, and the short time I had to get them fat. I believe that if I had put them up fat, and fed them from the 1st of November in a warm house, that I would have had better beef, and saved one-third of their food.

The whole lot was in fine order, and I learned, accidentally, that the butchers thought they had much less offal about them than usual—a fact doubtless attributable to the mode of feeding.

In conclusion, I will say, that to sell well we must not rely upon good luck or an open market. The only safe reliance is on the order of our stock. They must be fat enough to *command* their value.

All which is respectfully submitted.

FRANK: G. RUFFIN.

May 20, 1848.

For the Southern Planter.

GRASSHOPPERS—MANURES—SUB-SOIL PLOUGHS.

Mr. Editor,—I desire to occupy a corner of the Planter, to make an inquiry and an observation or two. Some of my neighbors' farms, as well as our own, have suffered to a most serious extent this summer with grasshoppers—vegetation on some being entirely stripped off, and the roots of much of it killed. Have you ever read or heard of any remedy for this evil? I have observed that they make their appearance generally about that part of a farm nearest to wood land, where I am inclined to think the egg is deposited and protected by the leaves from the cold; they hatch early in summer, and commence their forrays on the neighboring fields. I have believed that some protection might be had, to select a suitable time in the spring, and have the leaves carefully raked from the fencing, and set on fire for a space into the woods deemed sufficient. The eggs, or it may be the young insects, might in this way be destroyed—at any rate the experiment is worthy of a trial.

On the subject of manures, I beg leave to say my observation concurs with the experience of I. D. in the June number of the Planter, of the *greater* benefit to be derived from the application of fresh manures to the surface, whether of grass or wheat. It does not matter either in my opinion as to the season at which the application may be made, whether in midsummer, fall or winter. The fertilizing properties of the manure seem to be absorbed by the earth, and their effects are very soon visible on the crops. There is less loss by evaporation than the casual observer might suppose. How much we might do to *add* to the *quantity* of manures, if we would take a moderate share of pains. I have for some time believed that the *very best* expenditure any farmer can make would be to employ a reliable hand with a horse and cart *all the year*, in collecting *materiel* for the manure heap. How many hundred loads, think you, could be collected in this way? I think that *eight* cart loads per day could easily be made on a farm of three or four hundred acres. Allowing three hundred and ten days, you would have two thousand four hundred and eighty cart loads—or four cart loads to an ordinary two-horse load, you would have twelve hundred and forty loads worth, may I not safely say, *one* dollar per load. But for the sake of perfect fairness in the estimate, put it at three shillings, you will have six hundred and twenty dollars' worth of manure. Now put the hire of the hand, cost of horse and cart, board of hand, and feed, &c. of horse at the most liberal sum you choose, and say three hundred dollars, and see the profits derived. But it is not in the *intrinsic* value of the manure made in this way, but in the effects it will have, not only on these and about your own farm, but on others, in seeing the *benefits* resulting from economy of small things that are all wasted about our houses and on the farm—viz: the soapsuds, the brine, and *chamber*

lye, the ashes, the scrapings of the hennery, the noxious weeds taken off in time and put in the heap, the night soil, the scrapings of the hog-stye, of fence corners, ditch banks, leaves, rotten wood, residue of coal pits, and an innumerable variety of other sources, would amount in the aggregate to a bulk that would stagger belief. *I intend, Mr. Planter, to try it*, and Providence permitting, will at the end of the year give you the *result* of my labors. Query, What are the cheapest acids to decompose bones? Is there *any thing* will act upon *old* leather to render it a food for plants? The cleaning of our saddler and shoe-maker shops accumulate much in a year.

Permit me to say that in my humble judgment the *subsoil* plough is destined to do much in the Valley of Virginia to improve our lands. Will our farmers try it? It is the *cheapest* plough, at *double* the cost, of any other. There is no doubt of it. I have tested the "Cast Steel Extending Point" Subsoil Plough of C. B. Rogers, of Philadelphia, and can *honestly* recommend it as a most admirable one—and with its extending point, the cheapest that I have seen. I would advise the use of the wheel. I have recommended to him to have them made *heavier* for our region. The No. 1 size is preferable. I did not intend to say so much when I took my pen.

With my best wishes for your success in improving *Virginia* agriculture,

I am, very truly, your friend,

J. MARSHALL M'CUE.

Augusta County.

Grasshoppers.—The means of destroying them are somewhat too refined for our agriculture, and would be useless unless more than one person should adopt them. The fields are sometimes drawn over with a sheet elevated at the hinder end, and the insects thus caught are let into a bag every few rods, or as the sheet gets full, and killed by letting the bag into boiling water, which cooks them very nicely for the hogs. But with us they will rarely so abound as to make it necessary to resort to this plan; and their natural enemies will generally destroy them. All birds and fowls, particularly turkeys, are very destructive to them.

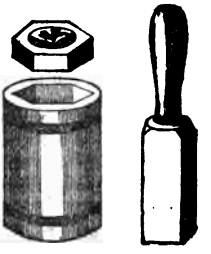
To decompose bones, sulphuric acid is the cheapest. It sells by the pound, is very heavy, and the price is much greater inland than in any of the large cities. It will probably cost in Augusta about six cents per pound, though worth in Baltimore only two or three cents.

Professor Norton, as good authority as any, gives the following mode of applying it: to every one hundred pounds of bones, about fifty or sixty of acid are taken; if bone *dust* is used, from twenty-five to forty-five pounds of acid is sufficient. The acid must be mixed with two or three times its bulk of water, because if applied strong it would only burn and blacken the bones without dissolving them.

The bones are placed in a tub, and a portion of the previously diluted acid poured upon them. After standing a day, another portion of acid may be poured on; and finally the last on the third day, if they are not already dissolved. The mass should be often stirred.

The bones will ultimately soften and dissolve to a kind of paste. It is then mixed sometimes with water, but preferably with a large quantity of ashes, peat earth, sawdust or charcoal dust, or even common earth, and it is then applied with or without other manure at the rate of three bushels per acre of the dissolved bones. If other manure is applied it is estimated that half the usual quantity only will be required.

THE SIX SQUARE-BUTTER MOULD.



The above cut represents D. Perry's latest improved Six-Square Butter Mould. This mould is larger at the top than at the bottom, so that the butter leaves it easily, a part being turned out on the outside, making it smaller in diameter and better to hold in the hand; and by turning out the three screws in the lower end a little, as legs to stand on, it is made to hold exactly one pound of butter. In using this mould never let it be washed in water, but soaked in strong brine, kept in a clean vessel for that purpose. Have your butter as hard as it will work well; place the stamp in the bottom, on the end that has the screws in it, put it one-quarter full, and press it down

on every square with the handle; repeat until full, and turn the mould the other end up—place the handle on the stamp and press out the butter. More butter can be packed in a round box with six-square lumps than in any other shape, and ten pounds can be put up while one could be without it. Sold wholesale and retail by D. Prouty & Co. 19 North Market street, Boston, with a new article for making and stamping butter for family use.

We procured one of the above described butter moulds from D. Prouty & Co. and think them well adapted to their purpose. They are above five inches high by three wide, and those who send butter to market would do well to get one. At least we have obtained one for that purpose. They can be had through Mr. James P. Tyler, Family Grocer and Commission Merchant, corner of Cary and Twelfth streets, who is one of the largest butter dealers of this city.

For the Southern Planter.

JERUSALEM ARTICHOKE.

Mr. Editor,—Some inquiry having been made as to the value of the artichoke as food for hogs, I will, at your request, freely give my observation and experience (though limited) on the culture and mode of feeding.

The Jerusalem artichoke has been long known in this part of the country as an esculent, and I have known it planted in our seaboard country as food for hogs; but whether found profitable or not, I am not able to say.

Some twelve or fifteen years since, Mr. William D. Meriwether, Sr. obtained from Tennessee three bushels of artichokes, differing from the root we had known before, in form, color, and productiveness. This root was long, (like the strings of the sweet potato) of a pale yellow color, and amazingly productive. When first planted, the land was prepared as for corn, and planted early in April. The drills being laid off three and a half feet apart, and the roots laid along the drills without much regard to distance, only taking care to have them near enough, and covered with a light plough; the plant soon came up and was ploughed once in May with a one horse plough—a cultivator was used some time after to smooth the surface left by the plough, and no other cultivation. I saw a part of this plantation dug sometime during the succeeding winter—many cart loads were hauled off and placed on a plank floor to be fed to the hogs. After all were gathered that could well be collected by ploughing the ground and using rakes after the plough, the hogs were then allowed free access to the lot. It was found, however, that the digging and housing did not answer well, as the loss was very great in shrinkage from so succulent a root. So much for my observation. I will now give my experience on the same subject. I used the artichoke for several winters, and I thought with good purpose to aid in keeping my stock of hogs. The second year after planting I found the roots extending throughout the rows. The hogs had a range of wood land and were permitted to go into the lot at all times after the first of December, except when the ground was very wet; as I soon found if they were allowed the use of the lot in wet weather, that they packed the ground and made it more difficult afterwards to get at the roots with their snouts. I also found that they were much aided in their feeding by coultering the whole lot now and then when it seemed to be getting too close for their operations. Planting once I think will answer for a number of years. The hogs should be taken off by the middle of March, and it will be found that the young plants will begin to appear towards the latter part of that month, should the weather be mild. Soon after this the ploughs may be used in breaking up the land, leaving strips unbroken and in rows as they were first planted. In this way the same lot may be used for a number of years. I do not think it is an exhauster, as the stalks and leaves are all returned to the ground trampled and well broken up by the hogs during the winter. My habit is to have my hogs fed twice a day during winter, (morning and evening,) and I think when I used the artichoke, about half the usual quantity of corn was given them, and their condition was better than it had been in previous winters with the double feed of corn. It was said when I first used this root that it would not answer for the sows suckling pigs—this idea, however, is not confirmed by my experience, as I tried them on the lot and they were improved in condition.

It has been urged as an objection to the artichoke, that once fixed in the ground it could not be eradicated. I have not found it so. The cattle are fond of the tops at all times before the frost kills them; and with the hogs at the roots and the cattle at the tops, they can never prove a pest. For a year or two past I have not kept up my lot, and the only reason I can give for it is, that everlasting excuse, too much trouble.

F. K. Nelson.

Albemarle, October 11, 1852.

As a feeding crop, the artichoke has been compared with the potato, producing about double as much *in weight* per acre, and it has been a question how far it may be substituted therefor since the rot has proved so destructive. From an analysis of it by Dr. Salisbury, which we find in the Transactions of the New York State Agricultural Society for 1850, it seems that "the artichoke contains much less starch than the potato, but is richer in sugar, dextrine,

albumen and casein. Its power for fattening, perhaps, would not equal that of the potato, but in muscle, nerve, &c. forming products or nitrogenous bodies, its composition would place it quite equal to that of the potato. The analysis shows it to be even richer." If this be so, it would be a very good thing on the proper sort of land for store hogs, or those kept through the winter for the next year's killing. What that sort of land is we cannot in all cases determine, but would think them a suitable crop on soils that will not bake from being rooted up in the winter. Such for instance as the sandy flats of the Mattaponi and the sandy lands of King and Queen, Essex, and other counties in that region. We made trial of them several years ago, but as our land changes to glue when it rains we abandoned the crop after one season.

Boussingault tried them as a food for horses, and found by two well conducted experiments that, in the proportion of thirty pounds of artichokes for eleven pounds of hay, they were a full equivalent for half the usual feed of hay. As they are very watery, containing some eighty per cent. of water, which is more than potatoes do, it would not do to give them in larger proportion, if in our country it would do to give them at all.

FORMIDABLE LOSSES.

Every farmer who understands common arithmetic, may amuse and instruct himself with great advantage by a few interesting calculations. Successful tillage, as every one knows, consists in three important particulars, namely, a good soil—its fertility made accessible; and the entire monopoly of that fertility by the crop intended. A soil may consist of the most valuable ingredients, but if these are kept immersed in a subterranean basin of water, as in many undrained soils during every wet season, they are as inaccessible to the plant, as if encased in walls of masonry. A hard, uncrumbled soil is little better. But the greatest absurdity in farming, is to expend five or ten thousand dollars in the purchase of land, some hundreds more in fitting it for prolific crops, and then permitting one-fourth, one-third, or even one-half its costly value to be drawn out and destroyed by the growth of useless weeds!

We have known men who were exceedingly jealous of "their rights." Rather than be defrauded of a half dollar, they would rush into a law-suit costing twenty times that sum. Rather than lose "the best end of a bargain," they would resort to a great many very inconvenient and troublesome expedients. Rather than submit to furnish a neighbor's lawless hog with a single meal of undug potatoes, they would incur perpetual resentment. But strange things have not come to an end, for these are the very same men that submit with most admirable patience to the invasion and waste of thousands of elder bushes and burdocks, tens of thousands of mulleins and horse-thistles, and a hundred thousand Canada thistles, and a million red-root plants.

Now, the calculations we are about to propose, as above alluded to, are these: Let every land-owner, whose fences are lined with a belt of elders, burdocks, and briers, ascertain by weighing, the precise amount of vegetable growth yielded by these three plants on a square yard of land; multiplying by thirty will give the weight on a square rod. Then let him make a fair estimate of the amount of land thus occupied along all the miles of his fence, and he may soon know how many tons of elder bushes, briers and burdocks, his costly land grows in a year. It would of course be quite as well for him to have this growth in clover, timothy, or Indian corn—but before throwing the calculation aside, let him ask himself, if he would not feel somewhat indignant should his neighbor's cattle fall upon and devour an equal number of tons from his meadow or corn field. Now, cannot he contrive to get up a like amount of indignation against the weeds? The same kind of calculation may be applied on the same farm, to the Canada thistles, horse-thistles, Johnswort, pig-weeds, mulleins, mustard and fox-tail grass, which grow in various degrees of denseness broadcast over the fields. We cannot but think that on some farms it would present rather startling results.

It would be an interesting inquiry to look into the actual losses sustained through the whole country by the growth of weeds. How many tons on an average are grown by each of the million farmers of the United States? Three—five—or ten? If the former only, the aggregate crop would be enough to load a continued train of farm wagons three thousand miles long—or twenty thousand canal boats—or more than ten times all the whale ships belong-

ing to the country, with this useless herbage. A single weed—the red-root—has been estimated to have occasioned greater loss in some counties than if every dwelling house had been consumed by fire. Is not the subject one worthy of some attention?

Now, there are two ways in which all this evil comes upon us. The first is by the increase of seeds; the second, the want of prompt destruction when once the evil has commenced. The increase by seeds, under favorable circumstances, almost exceeds belief. We have counted the grains on a single moderate sized plant of chess, and found over three thousand. An equal increase the second year would produce nine millions; the third year, twenty-seven thousand millions; the fourth—but we will let some of our young arithmetical readers carry out the reckoning for ten years, and see if there is not enough seed by that time to turn the whole wheat crop of the globe to chess. A full grown, adult pigweed will yield eight thousand seeds—which may increase in a few years to countless myriads, just because, as Prof. Lindley says, the cultivator was unwilling to make "a single flexure of this vertebral column," in extracting the first young weed from the soil. There are certain weeds, troublesome and costly in the highest degree in some regions of country, which are entirely unknown in others—simply because no seed have ever been deposited there. Then again there are other localities which were once plentifully infested, which have been completely eradicated, and not a single representative left. We could name several farmers who have succeeded in driving from both soil and seed, the last vestige of that insidious intruder, chess; and several others who by vigilance and industry, had exceedingly lessened the annual weeding of red-root. Such examples are worthy of imitation; and at the present season, when weeds are about preparing to form their millions of germs for increase, we hope the subject may receive the special attention of cultivators.—*Albany Cultivator.*

A Simple Way to Pack Eggs.—Seeing frequently in our markets the great trouble many persons go to in packing eggs to bring to town, I would recommend them to try putting them up simply in a basket packed in soft hay closely up to the handle. I have tried this frequently and found it to answer just as well as any other way.

THE SUBSOIL PLOUGH.

There is one important consideration always to be kept in view in subsoiling; and that is, that the soil be first thoroughly drained. It should be drained one year before the operation of subsoiling is commenced, so that the cold spring water may have had time to pass off from the subsoil. Almost every garden will afford an illustration of the benefits of deep culture.—Trenching is a more thorough operation than subsoil ploughing, as it exposes the subsoil to view, breaks every portion to a greater depth, and mingles the two soils more intimately. None doubt that deep digging in the garden is profitable, and none who try it under proper circumstances will doubt that deep ploughing in the field is so.

It is only a few years since the first subsoil plough was introduced into this country, and was purchased in England for Messrs. Ruggles, Nourse, Mason & Co.; it cost forty dollars.

Now, superior subsoil ploughs may be had in this country for one-fourth of the cost of that in England; and they are of greater strength, for that plough was used only a short time before it was twisted so that a common observer could hardly tell for what purpose it was intended.

The subsoil plough is a valuable implement on many soils, by deepening the tillage and giving sufficient room for the descent of the roots of plants, and to promote the ascent of moisture, in dry weather.

By the use of this plough the subsoil is loosened deeply, mixed with the soil and gradually brought to the surface, where, by changes from the air, snows and frost, it becomes improved, and restores in some measure many fertilizing substances that have been lost on old lands.

Numerous examples have been given to the public, showing the great utility of this implement. Yet, in some cases, it has been reported that there was no perceptible advantage from its use, while in other cases, the crops have been increased fifty per cent.

Where no advantage has been found from the operation of subsoiling, the cause may undoubtedly be traced to the want of proper preparation of the ground by draining.—*N. E. Farmer.*

Never be idle. If your hands cannot be usefully employed, attend to the cultivation of your mind.

PLOUGHING AND SEEDING.—I wish you would encourage our agriculturists always to seed their grounds as fast as they plough. The amazing advantages will at once be apparent to the reflecting farmer. To those who will not think on the subject enough to see its importance, I recommend to "try a patch."

It is lamentable to see so many farmers ploughing for a week, and then when the whole field is done, and the weeds and grass seed pretty well germinated, begin to put in their crop.

The moisture and mellowness of the earth, when first turned, create immediate vegetation; delay loses this to the crop, and gives the advantage to the weeds and grass that are in the soil. Only look at it!

PAYMENTS TO THE SOUTHERN PLANTER,

From October 7th to November 1st, 1852.

James Jameson to June 1853,	$1 00
James Bowen to September 1853,	1 00
Garland T. Wheatley to Sept. 1853,	1 00
Richard B. Baptist to January 1853,	3 50
J. Wallace to January 1853,	1 00
F. W. Boyd, in full,	3 50
C. P. Warner to July 1854,	4 00
Lewis Mabry to October 1853,	1 00
James Fitch to July 1853,	2 00
Samuel P. Wilson to September 1853,	1 00
Jones C. Green to June 1853,	1 00
W. A. Wiglesworth to September 1853,	1 00
W. H. Cousins to January 1857,	10 00
E. R. Turnbull to January 1854,	2 00
Walter Turpin to September 1854,	2 00
Capt. Joseph Phillips to January 1853,	6 00
Mrs. Susan H. Powell to July 1853,	1 00
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H. L. Jeffries to January 1853,	1 00
William Carter to January 1855,	2 00
S. T. Barclay to January 1854,	2 00
John H. Montague to October 1853,	1 00
George W. Pollard to July 1853,	1 00
J. L. Cabell to June 1853,	1 00
George W. Ball to September 1854,	2 00
Simeon Gibbons to July 1854,	1 00
John P. Resor to September 1853,	1 00
Charles Bruce to September 1854,	2 00
George Whitlocke to January 1853,	1 00
Dr. Faulcon to January 1853,	1 00
W. H. Harrison to January 1854,	1 00
Maj. B. Craig to September 1853,	1 00
Stafford G. Cocke to September 1853,	1 00
Robert Wilson to July 1853,	1 00
John Lewis to January 1854,	3 00
B. Franklin Carter to September 1853,	1 00
Norborne Berkeley to September 1853,	1 00
Addison Carter to September 1853,	1 00
R. H. Dulany to September 1853,	1 00
Robert T. L. White to September 1853,	1 00
A. H. Clark to September 1853,	1 00

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Professor of Experimental Sciences, Randolph Macon College, Va. oc—tf

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oct—1y

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June 24, 1851—tf

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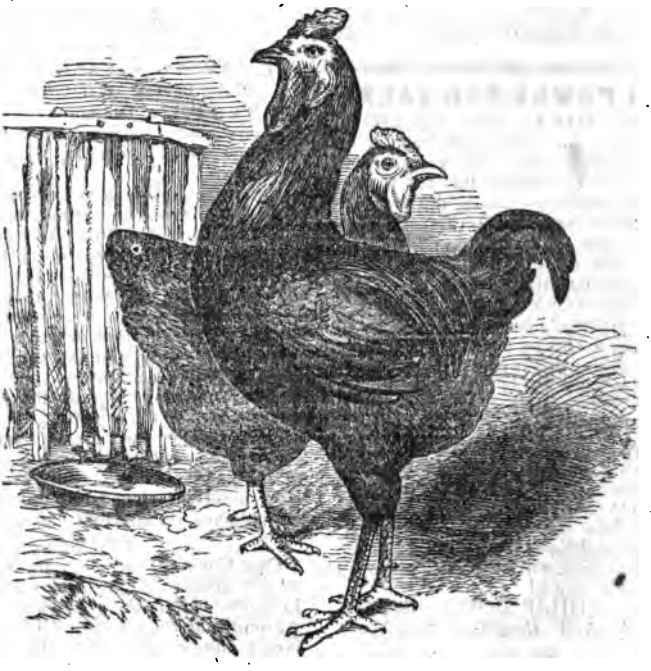

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nov—1t

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Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon.*

Tillage and Pasturage are the two breasts of the State.—*Sully.*

VOL. XII. RICHMOND, DECEMBER, 1852. No. 12.

We invite particular attention to the following very able, instructive and interesting article. The author, with characteristic delicacy, has withheld his name, but we are so unwilling that one who has so well deserved the gratitude and approbation of our readers should appear as a stranger among them, that "we take the responsibility" of introducing to their attention SAMUEL MORDECAI, Esq. whose intelligence, moral worth and force of character have long maintained for him a rank among the first of our merchants.—ED. SO. PLANTER.

Communicated to the Virginia State Agricultural Society.

TOBACCO.

[Published by order of the Executive Committee.]

The production of tobacco in the United States, according to the tables of the last census, was about two hundred millions pounds, and the proportion of each State, in round numbers, was as follows:

Vermont,	120,000 lbs.
Connecticut,	1,384,000 "
New York,	70,000 "
Pennsylvania,	858,000 "
Maryland,	21,215,000 "
Virginia,	56,517,000 "
North Carolina,	12,058,000 "
South Carolina,	73,000 "
Georgia,	420,000 "
Florida,	983,000 "
Alabama,	164,000 "
Mississippi,	50,000 "
Louisiana,	25,000 "
Texas,	61,000 "
Arkansas,	225,000 "
Tennessee,	20,145,000 "
Kentucky,	55,765,000 "
Ohio,	10,481,000 "
Michigan,	3,000 "
Indiana,	1,035,000 "
Illinois,	845,000 "
Missouri,	17,038,000 "
Iowa,	2,000 "
Wisconsin,	1,000 "
California,	1,000 "
Oregon,	1,000 "
New Mexico,	1,000 "

It will thus be seen that the plant *may* be grown in almost every part of this country, as it may in almost every country in Europe, and is, more or less, where the cultivation is permitted, and it is extensively cultivated in Cuba, Brazil and no doubt in other parts of South Amearica.*

We have not the means of ascertaining the production of foreign countries, but it is probable that of the several countries in Europe does not fall short of one hundred millions pounds. France one-fourth of this, Hungary one-fourth, Holland, Germany, the Ukraine and other parts, one-half. This estimate must, however, be taken with many grains of allowance in the absence of statistics to which to refer.

We will give those tables pertaining to this country, to which we have access, embracing nearly all the information respecting this article in such general use (however useless) which we profess to offer—and first of

VIRGINIA.

Years.	Inspected. Hhds.	Foreign Export. Leaf and strips.	Foreign Export. Stems.	Manufactured and shipped coastwise.	Stock 1st Oct.
1841	56,146	34,445	6,074	22,010	8,719
1842	52,156	32,765	3,245	18,120	11,100
1843	56,788	36,236	2,000	18,880	13,420
1844	45,883	20,496	2,687	24,449	14,363
1845	51,126	17,471	2,182	24,890	21,873
1846	42,679	21,200	3,220	24,537	19,110
1847	51,726	16,560	5,488	36,149†	18,127
1848	36,725	13,256	4,030	24,954	15,979
1849	44,904	19,643	3,430	27,720	11,500
1850	41,950	10,560	4,501	28,276	14,450
1851	32,598	3,953	3,850	28,953	14,353
1852	51,806	13,771	5,019	38,853	13,535

The proportions inspected at the several markets for the last four years are as follows:

	1849	1850	1851	1852
Richmond,	18,803	17,086	15,678	24,119
Petersburg,	9,085	9,521	7,220	10,489
Lynchburg,	10,465	7,968	5,810	10,700
Farmville,	3,163	3,413	1,425	2,255
Clarksville,	2,908	3,570	2,141	4,001
All other,	507	392	324	242
	44,904	41,950	32,598	51,806

* In Paraguay 9 millions pounds of fine quality.

† This excess cannot be in the quantity manufactured. It may partly arise from shipments coastwise, for re-shipment to Europe, and partly from error in stocks, but is otherwise unaccountable.

The foreign export was thus distributed in same years:

	1849	1850	1851	1852
G. Britain,	9,667	4,992	1,908	5,416
Do. for orders,	551			
France,	3,267	1,682	850	3,558
Belgium,	1,478			430
Holland,	663	1,377		1,025
Bremen,	1,045	703	314	1,432
Italy, &c.	2,972	1,816	881	1,910
	19,643	10,570	3,953	13,771

The export of 1851 is the smallest on record. The average export from 1840 to 1849 was 24,000 hhds. and in former years it was much larger, but it is now substituted by Western tobacco, while the great mass of the crop of Virginia and N. Carolina is manufactured at home.

The inspections of Virginia embrace the crop of North Carolina, which is nearly all brought to our markets.

In addition to the quantity inspected, there is probably equal to 7000 to 8000 hhds. manufactured from loose tobacco. Of this a large quantity is brought to our markets during the winter and spring, and 35,000 to 40,000 boxes, made chiefly from uninspected tobacco, are sent from the Roanoke country to Petersburg for shipment to Northern markets, besides a large number of boxes sent from the same quarter by wagons to the Southern and Western interior, to supply retail dealers.

BALTIMORE INSPECTIONS.

Years.	Maryland	Ohio.	Kentucky, &c.	Total.
1847	34,580	15,219	772	50,571
1848	23,490	9,702	703	33,906
1849	30,689	13,664	1,248	45,601
1850	27,085	13,965	783	41,833
1851	25,013	16,798	931	42,742
Average	28,171	13,869	887	42,930

EXPORTS OF TOBACCO FROM BALTIMORE.

Years.	Bremen.	Rotterdam.	Amsterdam.	France.	All other.	Total.
1847	22,967	7,819	11,388	9,413	1,895	53,482
1848	12,787	7,910	3,103	4,959	131	38,890
1849	18,821	13,783	8,795	9,562	1,033	51,924
1850	15,864	7,814	5,973	8,177	6,540	44,368
1851	12,654	9,694	4,154	2,327	5,292	34,124
Av.	16,018	9,404	6,668	6,857	2,978	44,557

The Maryland hogsheads are much lighter than those of Virginia or Western, weighing 600 to 900 against 1100 to 1400.

NEW ORLEANS RECEIPTS AND EXPORTS.

Years.	Receipts.	G. Britain.	France.	N. Europe.	S. Europe.	Coastwise.	Total.
1843	92,509	27,437	11,645	21,618	7,536	21,655	89,891
1844	82,435	22,523	11,104	20,175	14,349	13,098	81,249
1845	71,493	12,553	9,013	19,051	11,029	17,033	68,679
1846	72,896	24,505	4,288	13,301	12,516	7,435	62,045
1847	55,588	9,695	3,497	8,018	17,849	11,317	50,376
1848	55,882	19,867	4,954	10,475	12,079	12,989	60,364
1849	52,335	14,017	10,640	7,039	10,347	10,853	52,896
1850	60,304	16,820	2,056	12,725	11,975	14,379	57,955
1851	64,030	13,223	4,182	9,393	13,859	13,844	54,501
1852	89,695	14,023	13,948	26,814	21,731	17,199	93,715

The export of tobacco from the United States of late years has been as follows:

Years.	Hogsheads.	Value.	Manufactured. Lbs.	Snuff. Lbs.	Value.
1839	78,995	$9,832,943	4,215,000	42,467	$616,212
1840	119,484	9,883,657	6,787,000	37,000	813,671
1841	147,828	12,576,703	7,504,000	69,000	873,877
1842	158,710	9,540,755	4,434,000	43,000	525,490
1843	94,454	4,650,979	3,404,000	20,000	278,819
1844	163,042	8,397,255	6,047,000	29,000	536,660
1845	147,168	7,469,819	5,313,000	44,000	538,498
1846	147,998	8,478,270	6,855,000	52,000	695,914
1847	135,762	7,242,086	7,845,000	37,000	658,950
1848	130,655	7,551,122	6,699,000	36,000	568,435
1849	101,521	5,840,247	7,160,000	50,000	613,044
1850	145,729	9,951,023	5,919,000	45,000	648,832
1851	95,945	9,219,251	7,235,000	37,000	1,143,547

It will be seen by the preceding statements that the great mass of the tobacco crops of Virginia and North Carolina is now manufactured at home, and from present indications nearly the whole will be thus absorbed in the course of a few years, as the consumption of chewing tobacco increases with the increase of population in the United States, and there is an annually increasing demand for it in the British possessions in America, Australia and elsewhere. Practice makes our manufacturers perfect in the preparation of it, which is no simple operation. An immense quantity of licorice is used in the manufacture, and no small quantity of loaf sugar, spices and essences. The several processes require a variety of machines and considerable manipulation. The prices paid by the manufacturers for peculiar qualities of tobacco far exceed those obtained for the article in any other market. While an exporter cannot afford to pay more than 6 to 10 cents per pound for good to fine leaf, a manufacturer will pay 15, 20, 25 and even 30 to 50 cents for such as best suits his purpose, but the great mass of "twists" and "lumps" is made from the cheaper and medium sorts.

The following table of the receipts of Virginia manufactured tobacco in New York and other places, will show the great extent and rapid increase of the business:

Years.	New York.	Baltimore.
1843,	61,676 packages.	
1844,	97,536 "	
1845,	105,682 "	
1846,	112,118 "	
1847,	138,051 "	
1848,	113,336 "	54,000 packages.
1849,	117,594 "	46,000 "
1850,	162,341 "	50,000 "
1851,	163,210 "	51,000 "

Philadelphia and Boston not ascertained.

Perhaps a portion of this increase in the *number* of packages may be owing to their diminished *size*.

Shipments are also made to various other ports, foreign and domestic. The establishments for the manufacture embrace some of the largest buildings in Richmond, Petersburg, Lynchburg, &c. and employ several thousand hands—free blacks and slaves, generally at high wages.

The inspection laws of Virginia, based on old colonial statutes, abound in absurdities, and those relating to tobacco, covering several pages of the Code, might be advantageously condensed in a few simple requirements.

Although the purchaser buys by the sample, on his own judgment, the law requires the inspector to qualify the tobacco, as "*passed*," "*refused*," "*too high*," and so to mark it in conspicuous letters on the cask in *four* places. The purchaser pays no attention to this, but frequently pays more for "refused" than for "passed," and the term "too high," which is not understood elsewhere, may frequently apply rather to the price than to the quality.

All that is now necessary is that the inspectors should be required to receive and book, to sample, to throw off wet or damaged tobacco, to cooper up, weigh, issue a receipt specifying marks, number and weight, and to deliver on demand.

But among the *wise* provisions of our inspection law, is one that requires the word "*Western*" to be marked on casks brought from that region. This is intended as a stigma, that it may not be mistaken for and degrade Virginia tobacco. We are constantly talking about extending canals and rail roads to the Ohio and Mississippi, and in advance we pass a law to stigmatize the commodity which we wish to attract to our market.

Jealousy of merchants, so long characteristic of Virginians, and an inordinate disposition to favor and protect the planter, have influenced the legislation of this State at all times. The act imposing taxes for 1852-'3, may be referred to in illustration.

Tobacco is a favorite article with European governments on which to raise revenue. Great Britain has an excise tax on it (unmanufactured) of 3 shillings sterling, or 72 cts. per pound. The quantity on which this duty was paid, was

in 1841, 21,845,000 lbs.	1849, 27,298,000 lbs.
1842, 22,500,000 lbs.	1850, 27,653,000 lbs.
1844, 24,250,000 lbs.	1851, 26,661,000 lbs.

The quantity smuggled is enormous. A parliamentary investigation was made some years ago, and amid a great mass of information obtained was the following:

A person in Belfast made a voyage to Holland every two months, and each time brought 40,000 lbs. tobacco. In 4 years he lost but 3 cargoes. The loss to the revenue was stated at £65,000 per annum.

A person paid duty on 10 hhds. or 12,000 lbs. per annum, and sold more than his neighbor who paid on 70,000 lbs. and smuggled largely besides.

A. offered to B. to bring to London from any port in Holland or Belgium 3 to 5 tons tobacco for £100, and to take all risks. B. shipped to Holland 4 hhds. which A. followed with his boat and brought it back in small bales, concealed under fish, landed it at Deptford and carted it to London.

A vessel brings in a cargo of herrings—half the barrels contain tobacco. A few barrels of the fish are opened and the whole cargo sold to an accomplice.

One of the largest brokers in London expressed his belief that the consumption of Great Britain was 40 millions pounds, when duty was paid on only 23 millions—and at that time the cost of the coast-guard to prevent smuggling was £512,168, or more than $2,500,000. There were 6,167 persons employed, of whom 4,886 on shore, and 66 cruisers or revenue cutters. The number of seizures of smuggled tobacco made in 1848 was 2,336,

of prosecutions 1,798, of persons imprisoned 453. The amount of penalties received £2,995.

Tobacco is a government monopoly in France, Austria, Sardinia, Parma and Tuscany, and also (under licenses to companies) in Spain, Portugal, Naples and the Papal States, who regulate the price as they please. The consumption of tobacco in France (sold by government) in 1844 was 36,864,276—in 1850, 40,943,000 lbs. English. The quantity smuggled is no doubt considerable. Dogs are employed to smuggle from Belgium into France. In 1830 as many as 4,360 dogs thus employed were killed on the frontier, and 3 francs reward paid for each, and that was about the average number annually destroyed. Of course the number that escaped must have been much greater, to have supported the business. About 10,000 hhds. tobacco have been annually imported into Gibraltar, a free port, for smuggling into Spain.

The cultivation of tobacco in Virginia and North Carolina was formerly much more extensive than it now is, and much of the best land was worn out and left waste by the reckless management of the planters. Georgia and South Carolina were also tobacco producing States until the introduction of cotton. The Western States will henceforward be the largest producers, but the cultivation in Virginia and North Carolina, now much more judicious than formerly, will probably rather increase than diminish, as the increasing facilities of transportation will enable those who have suitable lands, far from market, to engage in the cultivation, which is very profitable, if skilfully conducted, as the high prices paid for fine quality evince.

In 1851 New York imported from abroad 27,222 bales tobacco, chiefly for making into cigars, and 14,827 hhds. coastwise, chiefly from New Orleans.

It may be more curious than useful to state that during the colonial government of Virginia tobacco was by law adopted as a currency. Fines and penalties were fixed at so many pounds of tobacco—so also was the salary of the clergy and of other persons. The price was fixed by statute. All that was received by the inspectors as merchantable, bore the same value. Planters or farmers were *required* to cultivate a certain quantity, and if the produce exceeded the demand they were *restricted* to less. The fixed price was about 16 or 17 shillings per 100 lbs.

Until about 40 or 50 years ago tobacco was sold by presenting the inspector's receipt, or tobacco note, as it was called, without regard to quality. The purchaser never saw it, and the only or the chief criterion of value was the weight. A heavy hogshead was worth more than a light one, as freights were very high. At that time the judgment of the inspectors was important. Unmerchantable tobacco was burnt, and what is now called "lugs," and constitute a considerable portion of the crop, was not brought to market.

The small planter with his "tobacco note" would hawk it through the street from store to store, with "Mister, do you buy tobacco?" It was very common to see a placard at a store window, "cash for tobacco"—as it now is, "cash for rags." The larger planter generally dealt with one merchant, from whom he obtained supplies of every sort—clothing, hardware, crockery, groceries, medicines and school books. At the expiration of the year, or as soon as his tobacco was inspected, he called on the merchant for his account, which was usually settled by selling the tobacco to him at the current market price. The business was then almost monopolized by Scotch and English merchants, who took care to secure good profits on both merchandise and tobacco, and then originated the aversion of planter to merchant, which yet exists, in a degree, as already mentioned.

The primitive mode of bringing tobacco to market was curious: road wagons were scarce, roads bad and transportation high. The *hogshead* of tobacco was actually *rolled* to market on its own periphery, through mud and mire and stream. The cask was made of good oak staves, well hooped. The tobacco was pressed in, layer by layer, by a lever some 30 or 40 feet long, inserted in a mortise made in a large tree for the fulcrum, against which the hogshead was placed. When fully packed and headed a wooden spike, some two feet long, was driven into the centre of each head. The ends, projecting some inches, were rounded, and thus formed an axletree, to which shafts, made of a split sapling, were fitted. On these, in front of the cask, a few slabs were nailed, making a platform, and with sides to it a box, in which were stowed provision for man and horse, a frying pan, a hoe, an axe, and a blanket. Attached to the rear was a contrivance for carrying fodder. If the distance was moderate, the hogshead was thus rolled on its hoops as tires; but when the distance was considerable (50 to 150 miles) rough felloes were spiked at each end of the hogshead, about the quarter hoops, and these rude tires served to keep the cask out of the mud and prevent its being worn through.

The "tobacco roller," as the driver (usually the owner) was called, did not seek the shelter of a roof on his journey,—sometimes of a week,—but at nightfall made a fire in the woods by the roadside, baked his hoecake, fried his bacon, and rolled up in his blanket he slept by the fire under the lee of his hogshead.

Arrived at market, it was no small labor to remove with wedges the felloes, and to draw out the axletree pins—frequently only the projecting ends were cut off and the other parts left in the tobacco. Of course a good deal of injury was done by these numerous wooden spikes driven into the tobacco, and frequently in wet roads the water would find its way through the cask and damage the contents. With a sharp axe, the wet tobacco would be

trimmed off. The process of inspection and weighing completed and the note issued, the "tobacco roller" would march off with it to the street of business, and when he found a "Mister" who would "buy tobacco" and they could agree upon a price, with further stipulations frequently as to how much he would trade out in goods, a bargain was closed, and strapping the blanket on the horse's back he rode home. These men generally travelled in parties of several, and would have a merry time of it, if the weather was not too severe nor the roads impassable.

A "tobacco roller" might occasionally, but very rarely, be seen on his way to Petersburg within the last two or three years,—but the journey from beyond the Roanoke, which then consumed six days, is now performed on the railway in as many hours, and for the labor of 250 horses, and as many men and boys, (for a boy accompanied the man) for 10 days going and returning, is substituted a train of cars with 3 men, one-fourth of a day, and at one-fourth of the expense, if road wagons were employed instead of "tobacco rollers." Much of the land which was formerly worn out and suffered to grow up in "old field-pines" is now again brought into cultivation and produces the best tobacco for manufacturing.—But for the process of cultivation and "curing" I must defer to those who can judiciously describe it. This article has already been extended to a length which may prove tedious to the reader.

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Since writing the preceding we have met with a weekly periodical, recently commenced in New York, "The United States Economist," a commercial and statistical paper, which appears to be conducted with great industry and judgment. From an article in that we compile the following:

"A letter of the Governor of Virginia, dated James City, January 22, 1622, says, there was not more than 60,000 pounds tobacco made in the colony—but in 1639 the Assembly passed a law which recites that 'Whereas, the excessive quantity of tobacco of late years planted in the colony has debased the quality,' and enacts that 'all the tobacco planted this present and the two succeeding years in the colony, be absolutely destroyed and burned, excepting so much in equal proportion to each planter as shall make in the whole 120,000 lbs. stripped and smoothed,' &c. In consideration whereof the creditors of the planters were compelled to 'accept and receive 40 lbs. so stripped and smoothed, in full satisfaction of every 100 lbs. now due them.' 'The yearly export for 10 years ending 1709, was 28,858,666 lbs. of which 11,260,659 lbs. was consumed in Great Britain, and 17,598,007 lbs. in other European countries. In 1744-'5-'6 the average annual export was 40,000,000 lbs.; from 1763 to 1770 the average was 66,780 hhds. of about 1000 lbs. or 66,780,000 lbs.

"As we have now approached the period when the exportation of tobacco arrived at a point from which it has vibrated (sometimes a little above or below it) we subjoin a statement of the exportation for the years 1772-'3-'4-'5, which will furnish the remarkable fact that (compared with any succeeding four years since that period) the annual exportation of tobacco just before the Revolution was about the same that it has been at any time since, prior to 1840, in our most prosperous periods.

Years.	Lbs. exported from United Colonies.	Consumed or retained in Great Britain.	Consumed or on hand in other countries in Europe.
1772	97,799,263	97,791,805	7,458
1773	100,472,007	3,695,564	96,776,443
1774	97,397,252	18,698,337	78,676,915
1775	101,828,617	27,623,451	74,205,166
Av'ge	99,374,785		

During the 7 years of the war, from 1776 to 1782, the total export from the United States was 86,649,533 lbs. or an annual average of 12,378,504 lbs. Of the whole export 34 millions pounds were captured by the British.

The exports from the United States in 1787-'8-'9 averaged 89,103,666 lbs.

From 1791 to 1795	average	80,000	hhds. annually.	least year	60,000
From 1796 to 1800	"	74,000	"	"	58,000
From 1801 to 1805	"	84,000	"	"	71,200
From 1806 to 1810	"	58,000	" (embargo)	"	9,600
From 1811 to 1815	"	31,000	" (1811 to 1814—war)	"	3,125
From 1816 to 1820	"	74,060	"	"	62,300
From 1821 to 1825	"	80,540	"	"	66,900
From 1826 to 1830	"	84,270	"	"	64,100
From 1831 to 1835	"	91,800	"	"	83,150
From 1836 to 1840	"	101,669	"	"	79,000
From 1841 to 1845	"	142,240	"	"	94,500
From 1846 to 1850	"	132,534	"	"	96,000

The weight of a hogshead of tobacco is much greater now than formerly. Originally being less compactly pressed and in smaller casks, the average was about 600 lbs. At this time Kentucky averages about 1,300 lbs. and the average of all kinds, Kentucky, Virginia, Ohio and Maryland, we estimate at 1,200 lbs. The annual average exportation for the 21 years from 1815 to 1835 inclusive, was 82,760 hhds. which, at 1,200 lbs. per hogshead, makes

99,313,000 lbs. The annual average from 1772 to 1775 was 99,374,785 lbs. Which establishes the remarkable fact that the exportation of leaf tobacco remained stationary for a period of 60 years. Since 1835 the average is 117,000 hhds. but at a lower average of price.

When our exports of leaf tobacco for 2 or 3 successive years much exceed one hundred millions of pounds, for some succeeding years they are reduced below that standard. The Revolutionary War gave a check to the exportation of tobacco, from which it has never recovered; for until that period the annual average increased regularly and steadily. For the 31 years immediately preceding our Revolution our exports of tobacco annually increased nearly 2,380,000 lbs. and for 60 years since that period it has remained stationary, except when interrupted by wars or other difficulties. The reason is apparent. Before the Revolution all Europe depended on us for supplies of the article, but these being cut off by the war, Europeans turned their attention to growing it for themselves and have continued to cultivate it, while they have checked its consumption by onerous duties. It is remarkable that the increased consumption in the United States has been the main dependance of the grower of tobacco. The removal of taxes on other articles in England has favored the consumption in some degree—although on that article there has been no change since the duty was lowered in 1825 from four to three shillings per pound.

CONSUMPTION OF TOBACCO ACCORDING TO LATEST RETURNS.

	Pounds.	Population.	Per head.
U. States	81,934,000	23,081,000	3 lbs. 8 oz.
France*	40,943,000	35,400,000	1 lb. 2¼ oz.
G. Britain*	28,063,000	27,435,000	1 lb. 0¼ oz.

The quantity sold in France by the Regie was, snuff 14,914,000 lbs.; smoking 24,447,000 lbs.; cigars imported 437,500 lbs.; cigars made in France 1,144,500 lbs.

The difference between what the government pays for all its tobacco and what it costs the consumers, constitutes the tax. Cost $8,643,721; sales $24,762,990; profit 16,119,269 dollars. This gives a tax of about 40 cents per pound, but a part of this, say 10 cents, constitutes the profit of the retailer appointed by government.

The French government now encourages the cultivation of tobacco in their colony of Algeria. The report for 1852 is 1,073 planters, cultivating 1,095 hectares of land, estimated to produce 1,780,000 kilogrammes, of which 700,000 grown by natives. In 1851 there were only 137 planters of 446 hectares. The hectare is about 2½ acres—100 kilogrammes are equal to 221 pounds English.

* Exclusive of what is smuggled.

Communicated to the Virginia State Agricultural Society.

AGRICULTURAL MACHINERY, &c.

BY EDWIN G. BOOTH.

[Published by order of the Executive Committee.]

In accordance with the arrangement, that each member of the Executive Committee of the State Agricultural Society shall write for publication an article on some subject connected with agriculture, and yielding to the suggestion that agricultural machinery, &c. shall constitute the basis of my communication, I proceed to the performance of the duty which is thus incumbent on me. I hope we will all evince a disposition, in this way at least, to devote some attention to the position in which we have been placed. I will premise that this particular subject has probably been assigned me in consequence of my having previously published some essays embracing it, and I consequently cannot discuss it very fully, without unprofitable repetition. The remarks to which I refer (published in the April number of the present volume of the Planter,) were chiefly confined to the successful combination of steam and water power, and the machinery connected with it. I may state that the whole operation has continued in entire harmony and success, as the President of the Society and the Editor of the Planter can attest from recent personal observation.

I suppose, however, it is proper to confine myself to the machinery incident to agriculture. The importance of all machinery is regulated by the valuable purposes to which it can be applied. When the wheat crop, as in my section, formerly consumed from one-fourth to one-third of its value in its transportation to market; when the want of facilities for improvement confined its cultivation to a small surface of lot and fresh land; when it had to be trodden out and cleaned slowly, it was almost an affliction for a man to be encumbered with a very large crop. I heard a gentleman once say that he had hauled all he could with his own teams, had hired in addition all the teams he could command, and had left the balance in his granary. When this state of things existed, the machinery incident to its production and preparation justified but little attention. But now, circumstances have undergone a wonderful change, and command for this crop and its incidental

machinery an importance paramount to any other—and I shall regulate my communication accordingly.

Such uniform perfection in ploughs causes diversity of opinion, but I think very slight actual difference. The Meadville, Mayher and Cuff and Brace are, I think, more generally used in this region, and most highly approved. There is a growing disposition to use larger ploughs with more horses, and to plough deeper, and consequently to select ploughs in reference to this object. I heard my friend, Capt. Wm. G. Overton, (whose practical judgment is universally admitted by all who know him,) say that he could fallow as much or more land, with one four-horse plough than with two two-horse ploughs. This I certainly did last spring, where the draught in stiff low grounds was too much for two horses, causing stoppages, and cutting into the broken furrows. The four-horse plough was decidedly easier to the ploughman. I should suppose, except under peculiar circumstances, two horses and a two-horse plough would be sufficient.

The next machine in order is the drill. I have witnessed its operations when conducted with peculiar skill, and while I have never yet met with a single individual who used it who did not speak favorably of it, I confess it commands less of my admiration than any recent improvement.

In the first place, I am unable to perceive any saving of labor, which generally is the chief object pursued. The land ought to be well fallowed and harrowed *before* the drill is applied. These two first operations generally complete the seeding in this part of the country—making the operation of the drill extra.

It is true the labor of a seedsman may be considered as saved—but three hands have generally attended the drill, when I have seen its most skilful performance. Again, there is so small a portion of our surface suitable for it, as stumps, roots, rocks or clods (which cannot always be avoided,) are great impediments. The chief difficulty in this region is, that though you may alter it, to sow thicker or thinner with uniformity, still it is rarely the case that the seedsman should keep across a field without altering the quantity several times, which he cannot do (or will not so often) as well with the drill as with the hand. There is said to be a saving in the quantity of seed. I have, however, never yet seen a drilled field where the wheat did not seem thinner than it would profitably bear. Different years are so variable that the estimate of increased product is frequently very uncertain.

I may remark that about the best lowland crop I have ever seen, (Mr. John A Selden's, at Westover,) and highland, (Mr. John A. Scott's, of Prince Edward,) were both drilled. But with such land and management the result would have probably been the same with either system. Being anxious to foster every new and desirable improvement, it is not my desire to discourage the use of the drill; indeed, I would buy one at a fair price, (about sixty dollars.) I do not, however, for the reasons stated, see anything to justify the most extravagant price asked, merely because it is a new and patent article. I have seen one at sixty-five dollars (Moore's, I believe.) We are, however, too much inclined to regard a low price as indicative of imperfection. I sincerely wish success to this and every other attempted improvement.

The next operation is the reaping, and I regret that so much consumption of time on other matters may encroach on this, so highly important. There is so much sensitiveness amongst the proprietors and advocates of these machines, that I would approach the discussion with reluctance, but for the consciousness of intending nothing more than benefit to my fellow-man, and the discharge of the duty which has been assigned me. It is a subject of importance, both from individual and national considerations. I will here remark that there *seems* to be almost a censurable backwardness in most farmers in withholding from the public the results of their experiments, particularly when unfavorable. It is too common where a machine is purchased and fails, to lay it aside in silence, although the fact of its purchase may on that account lead many into a similar difficulty. I *know* that this backwardness does not result from any want of philanthropy or indisposition to render important service to their country. They desire these results, but are only slow and reluctant to appear before the public. I shall act on the supposition that they are willing to be used as instruments of usefulness to the agricultural interests—not objecting to the introduction of their *names* in attempting to accomplish humane and philanthropic objects. Anonymous statements and references lose much of their force on this account; and the subject I now commence requires the best evidence

the nature of the case affords, particularly as I shall oppose the usual current of opinion as indicated by the various premiums secured. M'Cormick's, being a Virginia reaper, would secure my prepossessions in its favor, if consistent with truth and a proper regard to mechanical merit. But although it has generally secured the premiums on a half hour or half day trial, and may continue to do so, I think I shall be able to prove that it is the most magnificent and costly humbug in its line. I regard it as unfortunate that at the World's Fair the premium was thus secured for America, as the result I fear will strip us of the incidental renown. Speaking thus plainly, I must be permitted to adduce my evidence in my own way. Mr. William Allen, of James River, has tried half a dozen of M'Cormick's reapers, and offered to make me a present of the whole of them. He has used Hussey's, I believe, with success and satisfaction. Mr. Corbin Warwick, of Beaver Dam, has tried four of M'Cormick's—two with some attempted improvement. *One* succeeded better than any I ever heard of; but was abandoned and never tried by him after the first crop. Mr. Warwick informed me that he afterwards purchased *two* of Hussey's—but only used one because it kept enough of his hands employed in securing his crop, which is a large one. Mr. R. B. Bolling has tried both, and in a letter to me after the harvest of last year, he remarks; "But for three of 'Hussey's Improved Reapers,' would have had much difficulty in securing my crop. The machines work beautifully, one especially, which I wish you to see, and will say more about it to you when we meet. A little more weight and consequently strength of castings, will make them almost everything an enlightened farmer can desire. No one who seeds thirty acres even of land capable of bearing twenty bushels to the acre, can afford to harvest without one; and the larger the crop the greater the saving to the operative."

Mr. Burgwin, of Roanoke, has perhaps tried more of Hussey's than any one farmer, and also M'Cormick's, I believe. I understood him to give Hussey's the decided preference. I have been informed that Dr. Wilkins, of Brunswick, bought one of M'Cormick's, and, not making the usual preparation otherwise, thereby endangered his crop. He, a subsequent season, bought two, and one of his neighbors informed me both were left on the field as worthless, or at least not answering his purpose. I was informed that his neighbor, Mr. Broadnax, tried two, and that what they did was very imperfectly done. Mr. Wm. Old, of Powhatan, tried one of M'Cormick's one harvest; during the next harvest, I saw it lying amongst the "things that were." I learn he had it fixed up and started again the late harvest, but soon laid it aside again. Dr. Henry Lewis, of Brunswick, has tried one of M'Cormick's. Though I have conversed with him on the subject, I do not recollect its particular operation. I believe he has abandoned it. I know that when in pursuit of repairs for his, he saw mine, (made by Hussey,) and pronounced it, from inspection, superior to his. Col. J. W. Gilliam, of Brunswick, has tried M'Cormick's, and abandoned it also.

I have been more particular in this enumeration, because I felt bound to embrace *every one* I had seen or heard of from reliable personal information. There may be some inaccuracies of information, which I hope will induce correction and a more perfect account, as so large an expenditure ought either to be obstructed or directed into the proper channel.

From this account, it may be stated that not one of M'Cormick's reapers has ever operated any profitable length of time in this region. In other sections it must be different, because I hear they are highly approved. While the best machines sometimes fail and break, or are not understood in their management, I think I may safely assert that not one of Hussey's has ever failed when fairly tried, and it is proper to make the same references to all I have heard of from reliable information. I have already alluded to a number in contrast with M'Cormick's by the same persons. The first introduced into this section was by myself—or it was rather sent to me as a valuable present by the friend from whose letter I have quoted above in commendation of them. There was some difficulty in first starting it, both by him and myself. In my case, I attributed it to the *slow* and *careful* entrance into the wheat; and the additional fact that the stubble in the row, necessarily cut by the cradle for the horses, was higher than the shears, but not high enough to fall back out of their way. They consequently fell down amongst the shears, choking them. The machines should be put into the wheat with as quick and rapid motion of the horses as possible in a walk. Mine completed the fourth crop a few days since,

cutting the last minute equal to any preceding. I will here remark that much skill is necessary in placing the hands around the field at proper distances, instead of following the machine in a crowd. Mr. William Bland, from his satisfaction at the operations of mine, purchased one, and has tried it two crops with entire success. Capt. R. W. Bragg, of Lunenburg, also purchased one, and after harvest returned his personal acknowledgments to me for my instrumentality in inducing him to do so. Mr. Wm. Irby, of Lunenburg, Messrs. Edward C. Robinson and John A. Hillsman, of Amelia, have all used Hussey's; and I learn from each one that the performance was successful. Mr. William S. Archer, of Amelia, was induced to secure my services in the purchase of one, by witnessing the successful operation of mine on May weeds, (the harvest having passed when he was at my house.) It reached him after the wheat harvest was over. I understand that a trial on oats, under unfavorable circumstances, was not satisfactory. On wheat, and suitable ground, &c. there need be no apprehension.

I will here remark to persons who may purchase these machines, there are certain portions most likely to break or get out of order, requiring double sets. I would always prefer two entire blades, though Mr. Hussey says he has less apprehensions about them than any other part. There should certainly be double sets of bolts and screws, confining the crank, wheels, &c.; it is true any blacksmith can make them. I was once considerably interrupted by the loss of a screw-tap, and though a small circumstance, it may be useful to others.

I have now noticed all of both kinds of machines known to me or of which I have reliable information of their performance on wheat. I saw one of Hussey's fixed as a mower, running on Mr. William B. Harrison's Upper Brandon. All of Hussey's can be fixed to cut clover, &c. at an additional cost of ten dollars. The platform is removed, and the blades let down lower. Thus fixed, even amongst water furrows, this machine was performing admirably. I think Mr. Harrison told me it performed well on wheat. I recollect to have seen an account of the satisfactory performance of one at Brandon during the visit of President Fillmore last year. In that whole region there is not one of M'Cormick's I believe in use, while Hussey's are universally preferred. There is no part of the country to which you can more safely go than that for whatever may be useful or gratifying or better calculated to excite the innocent and patriotic exultation, "I am an American citizen." Regarding the population, fertility and improvement of soil, judicious cultivation, &c. the boasting foreigner may be referred to that region of country, to silence all invectives, and challenge admiration, unless, as in many instances, he may possess tastes and feelings which it would not be desirable to gratify. But to return from this seeming digression, though the kind of country may have an important bearing on its practices and preferences.

My remarks have been sufficiently protracted; but it is important for the crop to be threshed and fanned for market. There has been great perfection in wheat threshers—each claiming some points of peculiar attraction. I am inclined to think that the Virginian can as well be supplied by Wells & Cochran, of Petersburg, or Smith and Baldwin, of Richmond, and others in the State, as elsewhere. It is an important consideration to procure all machinery in reference to the convenience of repairs.

I think it is generally a mistaken idea to undertake, by very heavy machinery, to thresh a larger quantity with a single drum. Such machinery generally has a very great strain upon it, and is likely on this account to break, and break down the horses. The difficulty consists in getting the wheat to the drum. Hands crowding together are apt to be in each other's way. If the size of the crop require rapid threshing and justify it, and if Whitman's railway power, taking up but little room, can do what is claimed for it, I would decidedly prefer to run two drums—dividing the hands. I have no doubt that in this way much more wheat can be threshed, with more ease, than when so many hands are crowded together.

In the communication in the April number, describing the harmonious combination of steam and water power, and the various purposes to which they could be applied, I expressed the belief that wheat could be threshed by the addition of a band and threshing box. I have since tested it, and found that a band extending from the fly or balance wheel of the engine, on the whirl of the drum, was all that was necessary to thresh with great power and rapidity. Much advantage can frequently be derived from elevating the drum on a platform several feet above the floor or

ground, in superseding the necessity of moving the threshed wheat, while the operation of threshing is in progress. This arrangement, with a straw carrier, reduces considerably the number of hands necessarily employed, and was more convenient to me in consequence of threshing with my engine on the side of a hill. There has been much improvement recently in fan mills. I believe the Bamberough has now the highest reputation—though in Richmond or Petersburg, I have no doubt, as good fans can be purchased as elsewhere. I was induced to try Reynolds', made in Richmond. Its performance is remarkable, considering its easy motion and rapid progress. With proper attendance, it will chaff out 100 bushels in one hour easily. I have seen it chaff out 11½ bushels in five minutes, fed by four hands, I believe. The bottom is taken out of the hopper entirely—the wheat falling on one coarse sieve. It can be made to perform as rapidly the second time, though it is desirable to be more careful and steady. It is remarkable that a fan mill, possessing the *apparent* perfection of Grant's, should not do better. Two of my most judicious neighbors have tried it, and unite in a very unfavorable account of its performance. There are some excellent fan mills made near James river, above Richmond, and no doubt in other portions of the State. A grain shovel to change the position of wheat, and to assist in feeding the mill, is worth its cost each day that it is used, in saving much labor. I believe the machinery incident to wheat has now been fully reviewed. Parker's corn sheller and oat cutter command a general preference. I believe it may be safely asserted that all the machinery made in Virginia is about as good as can be procured elsewhere, and regarding the convenience of repairs, should be preferred. It would not be remarkable if, in this respect, a mechanical should surpass an agricultural region. I have, however, never been inclined to accord any superiority to other sections, unless favored by peculiar advantages.

I fear that the length of my communication will induce regret at the arrangement which has induced it. I suppose that the postponement of legislative action furnishing the means of offering premiums, &c. will prevent the desired fair or agricultural exhibition the present fall; and if *nothing* should be done under the distinguished head of the Agricultural Executive Committee, I fear it would be difficult to find any person hereafter willing to assume the command. I have attempted to comply with the requisition made on me, hoping that a similar compliance by the other members of the Committee will so contribute to the advancement of our common cause as to repay their trouble and evince a disposition to accomplish the purposes of our appointment.

For the Southern Planter.

ANNUAL ADDRESS,

Delivered by FABIAN ARMISTEAD, *President of the Prince George Hole and Corner Club, No.* 1, *at the house of Robert Gilliam, Esq. December* 12*th*, 1851.

GENTLEMEN,—This day is the closing meeting for the present year, and the seventh year of the successful operation of this Club. It must be a source of gratification to our members, that during this period our proceedings have been conducted in a manner reflecting the highest credit on them.

I am sure there is not a member here present, who would pretend to say that he has not been benefited by his association with this Society.

In my last annual address, the statistics of the Club, furnished on that occasion, showed a progressive improvement of our farms and products from our commencement.

In my examination of the farms of the Club for the present year, I am pleased to say that they are much improved on the last, and the ratio of our products fully sustained. The agricultural interest of the present day with us, and indeed in almost every clime and country on the habitable globe, has acquired an importance and character hitherto unknown. In contemplating the vast resources of this wide and extended land, and the great amount of intelligence and research brought to bear on this interest, resulting as it has done in the manifest improvement of agriculture in general, men of other vocations in life have been disposed to regard it in a more favorable light, believing it to be not a mere menial pursuit, but one requiring as much ability and science for its successful prosecution as any other in life. Hence it is that we find men of the highest attainments engaged in agricultural pursuits.

I here beg leave to introduce on this occasion several experiments as made by

members of this Club, and would be much gratified if I could give the experiments made by each member; but this I have not been able to do, from their being made returnable to this meeting. The first I will introduce, was made by Mr. John D. Matthews, of Prince George Court House, with guano on oats. That he might accurately test the true value of guano, he seeded four hundred and forty-two square yards of unlimed and otherwise very ordinary land without guano; the yield was thirty-one pounds, making per acre three hundred and forty-five pounds. He then seeded the same amount of land alongside, of the same quality, guanoed at the rate of one hundred and fifty pounds per acre, well mixed with wood ashes, at the rate of five bushels per acre, and ploughed under eight inches deep, which yielded fourteen hundred and fifty-two pounds, making a difference in favor of the guano of eleven hundred and seven pounds per acre. I think it well to state here that Mr. Matthews seeded six acres of land in oats, guanoed and ashed at the above rates, which produced eighteen hundred and eighty-four pounds per acre, being better than the piece he experimented on.

The next I will invite your attention to, was made by Mr. William C. Rawlings, being guano on wheat, at his farm called Frozen Island, on land noted for its sterility and not limed. The quantity of guano used per acre was one hundred and sixty pounds, mixed well with one peck of plaster, and ploughed under six and eight inches deep. Mr. Rawlings reported that the portion of the field ploughed under eight inches made much the best yield. He, in order to ascertain the true value of the guano, left a portion of the land unguanoed, which proved so inferior it was not worth the cutting. It is the opinion of persons well acquainted with this land, that five bushels of wheat per acre would have been the greatest possible yield without the use of guano. The area of this field was about twenty-seven acres, which produced nineteen bushels per acre, making a difference in favor of guano of fourteen bushels of wheat.

The next experiment I will lay before you, was made by Mr. Coriolanus Russel: guano on wheat at the rate of two hundred pounds per acre, and ploughed in six inches deep; land unlimed and as sterile as Mr. Russel could wish. The crop of corn preceding the wheat only made a barrel and a half per acre. The yield of this field was twenty-two bushels per acre, of fine quality.

It is the opinion of the Club that Mr. Russel is indebted to the guano for seven teen bushels of this wheat.

My object in introducing the above experiments is with a view of drawing the attention of this Club more generally to the use of this great renovator of poor lands, placing such lands on a footing in point of products, with the most highly improved, at less cost than other manures and with more remuneration.

Notwithstanding guano has been known among us for a number of years as being one of the best and most highly concentrated manures, it is a matter of surprise, considering the exhausted condition of much of our lands, that it has been so little used; but like all new things, it has been distrustfully viewed.

From the experiments made with this article in our Club, under the immediate supervision of some of our members, and from the flattering results from almost every quarter, there can be no longer grounds to doubt of its great utility. Scepticism must now give way to positive and irrefragable results. Many not so sceptical have been deterred from its use by the high price of the article; this objection is, however, fully met by the great per centage realized on the outlay.

From the evanescent properties of this article, as represented, many have doubts as to its durability as a manure, but I feel authorized, on the evidence of practical and discerning farmers, to say it is as lasting in its effects as any other manure in use. And it is now not at all questionable that the land will be left improved after harvesting the crop.

We are informed by the chemists of the day that guano is extremely volatile, and hence it is recommended to plough it under as soon as applied to the land; and some say, in order to arrest the escape of the ammonia, plaster should be combined with it. There appears to be, however, much diversity of opinion on this subject.

In a recent controversy, emanating from a very distinguished source, a great difference of opinion as to the utility of plaster as mixed with guano existed. There was a great amount of evidence introduced on both sides, but it was so conflicting in its character, that it has left us still in doubt.

Chemistry is a science as interesting as it is valuable, and many theories in agriculture have grown out of it, and been

sent forth to the world, without testing or reducing them to practice. I must confess I am a little dubious on this subject, and am inclined to believe that the agricultural chemistry of the day, as presented, is a little tinged with humbuggery.

Such theories have been prematurely acted on, and no doubt have done an injury to agriculture that might have been averted by first ascertaining if they could be supported by practice.

Hence I conclude that theory and practice must go together. In this way, we would go on understandingly and the farming interest be substantially improved.

Ammonia is understood to be an essential ingredient to the growth of plants, but if it is as volatile as represented, I am inclined to believe that in the application of our manures in the ordinary way, there is but little of this ingredient left to go to the land.

Considering the length of time necessary in making these deposits of guano, and the circumstances under which they were made, and the manner of transportation from place to place in bags, it must be reasonable to conclude that much of this ingredient would have been disengaged. Hence I am of the opinion that ammonia is not as easy of escape as we are told.

Recent developments will go far in establishing my position, as men of science and practice have ascertained that guano, harrowed in with wheat, is as striking in its effects, if not more so, than when ploughed in.

The application of guano and its effects are as yet but little understood, and I fear that too much importance has been attached to its evanescent properties.

If I may venture an opinion as to the best application of guano for wheat, I would say incorporate it well with the surface soil by means of small ploughs or cultivators, so that it may come in immediate contact with the roots of the wheat. This appears to me to be the most common-sense view of the subject, and harmonizing fully with the received opinion that manures should be kept near the surface.

It was the custom formerly, and no doubt is still practised to some extent, to plough under all manures when applied to lands, designed for cultivation, believing it to be the most effectual method of guarding it against evaporation, and otherwise improving the land. It has been discovered, however, more recently, and I believe very generally practised, that to apply manures to the surface in the way of what we farmers style top-dressing, and more particularly to grasses, is more conducive to the growth of plants and more improving to the land.

If this is the case, which I have no reason to doubt from my own experience, let me ask what becomes of the ammonia? for in its flight, the plants can imbibe but little of its nutritive qualities.

If what I have shown proves anything at all, what must be the inference? It is that guano, with other manures, may be used with advantage applied on the surface to grasses, wheat, &c.

I claim not to be prophetic, but I believe the day is not distant when this application of it will be most approved and practised, while the old custom of covering it deep in the earth will become obsolete.

As agriculturists associated for purposes of improvement, it is our duty to reduce to practical purposes the theories of the present day; this is the only way we will arrive at the truth of them. And in order to carry out the object of this Society, the results of our experience should be disseminated around us that others may be benefited as well as ourselves. Other societies are in the habit of doing this, and I think it worthy of imitation.

It is the universal custom of farmers in this region of country to cultivate grain almost exclusively. From the great increase of wheat in this country, with full crops in Europe, and the consequent low price of the article, it becomes necessary that we devote more of our time and attention to other departments of husbandry, hitherto almost entirely neglected. There are many thousands of dollars paid away annually by this community to the West for mules and horses to cultivate our farms, that might easily be supplied at one-fourth the cost, by directing our attention to the raising of them. It may be urged that we are not prepared to do this for the want of sufficient pasturage. Lay your farms off in five or six shifts, and you will always have one for grazing purposes; even if the area of your fields is curtailed by this system, I doubt very much if your grain crops would be diminished. The area being less, you could devote more time to its cultivation and improvement.

The article of pork is another drain on your wheat money, taking away from among us its thousands, that might be, if not entirely, yet partially checked, by devoting

a part of our time to that department. I will, however, remark, and it affords me much pleasure to do so, that some of our members are very successfully engaged in this department; though they may not raise enough for their consumption, yet they are handsomely remunerated for their trouble. Hay is another article that might be cultivated with us; for almost every farm in this section of country has rich alluvial bottoms, admirably adapted to the growth of the grasses, that are now in a great measure neglected or unappropriated, but with a little trouble might be rendered a fruitful source of profit. If due attention was paid to the preparation and laying down such lands in grass, we might wholly or in part supply the demand of our principal marts, that now receive their supplies from the North. In this way the foreign article would be driven out of our markets, as it would not be able to come in competition with us.

Unless we are prepared to supply the home consumption, it is vain to talk of non-intercourse, or to form societies for the purpose of interdicting Northern articles.

In a previous address, I dilated very fully on the importance of subsoiling our lands. As no action has been taken on this subject as yet, I will invite your particular attention to it. I will simply remark that vegetable as well as animal bodies, are supported by a free and unrestrained circulation of the particular principles that impart to them volatility.—Hence it is, if the circulation of the animal be suspended, death inevitably ensues.—So with the vegetable kingdom. If the particular agents that sustain the plant and bring it to maturity be withheld, it also must perish or prove unproductive. Then I am of the opinion that the subsoil plough is the most effectual means of promoting these agents. As the most of our lands are imperfectly drained, this operation would have the effect of carrying off much of the surplus water that does much damage to the crops.

In view of the benefits of our Society, as manifested in the condition of our farms, it cannot fail in carrying conviction even to the hearts of those who have predicted our downfall, that there is something to be gained by associations of this character. I am fully persuaded that all of you feel an abiding interest in this Society, and that it is your hearts' desire that it be perpetuated even unto our children. Judging of the future by the past, I am not apprehensive as to our destiny.

If we conform to the rules and regulations of our Society, we have nothing to fear; but, on the contrary, if we are regardless of them, this Society, that has been so long the pride and boast of its members, will, like many others that have preceded us, collapse into a state of indifference and imbecility, well calculated to defeat the end for which it was formed.

Then, gentlemen, let our motto be Agriculture and Agriculture alone, and there will be nothing to thwart us in the final consummation of this Society.

FATTENING CATTLE AND SHEEP IN WINTER.

The necessity of manuring the soil by natural or artificial means, before the maximum produce can be obtained, is now all but universally admitted; and whatever difference of opinion exists as to the best means of obtaining and applying manure, all agree that it must be obtained and applied in some way or other, or the soil will gradually become impoverished and incapable of profitable cultivation. In some localities it may be good economy to increase and preserve the fertility of a soil by purchasing *artificial* manures, depending principally on them, and selling off the farm nearly all the produce, and so making no manure by stock. For this purpose, good Peruvian guano, at two and a half cents per pound, is decidedly the cheapest and best artificial manure at present offered for sale. But the great body of farmers cannot purchase artificial manures; neither would it pay them if they could; their chief reliance must be on the manure made during the winter months, by cattle, sheep, and other stock, consuming produce grown on the farm. A consideration, therefore, of the effects produced by feeding a given amount of produce on a farm, cannot fail to be useful and interesting to every farmer. There are many scientific matters connected with such an inquiry, which it would be interesting to us and to some of our readers to discuss; but at this time we must confine our remarks to the vital question—Will it pay?

In the July number, page 205, we gave the results of some valuable experiments instituted by the Worcester Agricultural Society, Massachusetts, in regard to the economy of cutting food for stock. From

siness. Leaving the value of the manure out of the calculation, feeding is in most cases attended with direct loss; reckoning the value of the manure, and feeding with oilcake, beans or peas, and clover hay, it is attended with considerable profit.

Many will be inclined to object to these conclusions. We submit them, however, hoping that they will not be cast aside with a careless perusal, but be thoroughly investigated, when we think their justness will be evident. At all events, if they lead to thought and an examination of the matter, some good will be accomplished. The value of manure we have estimated according to the present price of guano. The subject is a deeply interesting and important one to every cultivator of the soil.—*Genesee Farmer.*

THE SOUTHERN PLANTER.

RICHMOND, DECEMBER, 1852.

TERMS.

One Dollar and Twenty-five Cents per annum, which may be discharged by the payment of One Dollar only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for Five Dollars; thirteen copies for Ten Dollars, to be paid invariably in advance.

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TIMELY WARNING.

All subscribers who do not order a discontinuance before the commencement of the new year or volume, will be considered as desiring a continuance of their papers, and charged accordingly.

HIRING NEGROES.

We have proposed for sometime past to write one or two essays on the management of negroes, but various business engagements and the desultory life of an individual who has to read, write, electioneer and solicit contributions for a paper, and at the same time to manage a large plantation, not in the best manner, by the way, leave us but little leisure for the preparation and reflection we would bring to the task. We have not proposed to undertake this task from an idea that we possess a peculiar fitness for it, or that our own management is unexceptionable, or even much better than ordinary; but we have long perceived that herein lies the greatest defect of slave agriculture, and we think that the attention of every slave-holder ought to be called to it.

For the present, we shall limit our remarks to one department of the theme which it is appropriate to speak of just now, because in one month more it will be too late for a year to come.

We allude to the hiring of negroes. As this thing is at present conducted, it is an injury to all parties, the hirer, the hiree, the negro himself, and society at large. Formerly, the owner himself exercised some care in selecting a master for his slave, and placed him where, in his judgment, he ought to be; but now the negro is permitted to "choose his master," as it is called; in other words, he is permitted to exercise a faculty of which he has less than of any other quality, to wit, *discretion*, and under circumstances which leave him no room to give fair play to what little he has. The strongest characteristic of the negro, whether it proceed from his original nature, or the circumstances in which he is placed, is idleness. And when this liberty is allowed him he will select that master who will grant him the largest license in that respect. The consequences are what might be expected; he either selects a master who he knows will indulge him, will exact but little labor, and grant him many privileges and a good deal of time for himself, or he is bribed by money, or the promise of privileges, to live with some one who, possibly from hope of a certain profit to accrue from a modicum of labor, is willing to take him on such terms, and thereby plants

the germ of rebellion in the contract for obedience, and stipulates himself into a certain amount of servitude.

The insubordination of the negroes in Richmond, attributed, as it has been, to certain other causes to which it is not due in any great measure, if at all, is mainly owing to this mode of hiring. If a tobacconist agrees to give negroes five or ten dollars to get them to live with him, allows them to board themselves for a pittance, which is but another name for grog money, and grants them privileges which are not less demoralizing to their characters than deleterious to their health, it should not be deemed surprising that the overseer in defence of his own life is sometimes compelled to substitute the pistol for the lash. If the servants in private families are permitted to act as nightly porters at railroad depots, to get money as they can by occasional jobs, to lead idle lives, to roam whither they will, to give suppers, sometimes champagne suppers, and to go quit of punishment or reprimand for many a fault, we cannot wonder that drunkenness, discontent, mutiny, and sometimes crime should supervene.

And when the farmer or planter so far forgets the proprieties of his station as to electioneer with negroes whom he wishes to hire, he must expect to lose respect of the slave, and be compelled either to deal rigorously with him in the outset, or to relax the discipline of his whole plantation, to the injury of his own negroes, the derangement of all system, the forbearance of all just accountability, and the consequent detriment of his affairs.

One would suppose that deductions as obvious as these would be made by all—and so they are. But none are willing to act on them independently. Each distrusts another's inflexibility, each fears the influence of competition from his fellow, and so all follow a road which will do more to render the slave worthless than all the efforts of Garrison, Birney, Beecher, Stowe, Hale, and that whole class of fools and Pharisees, who, under the guise of philanthrophy, would feed fat their grudge against a people whose attributes and privileges are at once their envy and their detestation.

And all this is owing to the simple fact that the old rule is reversed, and the *man* enquires, aye, enquires with insolence, into the character of the *master*. "Are you for hire?" said the late Judge Scott to a likely black. "I am, sir, what is your name?" "John Scott," said the Judge. "Very well," rejoined the black, "I'll enquire into your character, sir, and if I like it, I'll come and live with you." The Judge never made another effort to hire. We could fill pages of the Planter with similar cases, many of them coming under our own observation, and some of them within our own experience, for we too have met the scowl of the hireling.

Under such circumstances salutary restraint becomes intolerable to the negro, as it is to all other men when release can be had by demanding it, until presently he not only refuses to choose a master, but refuses to accept one at all. We have known all the negroes belonging to one estate to act in this manner, compelling the disheartened and disgusted agent to send them to their master to be sold. It is within the observation of some who will read these remarks, that last hiring season, about Charlottesville, masters were compelled to persuade, exhort, and even pay their own negroes to go where they had been hired. And not a few who were prevailed on to go over the mountains to work in the Valley came back and refused to return in defiance of command and entreaty, thereby subjecting their kind hearted owners to whatever forfeit the nature of the case made necessary. Thus, by a just and necessary reaction, the owner has his share of inconvenience, chagrin and humiliation, and is made to feel—only in reverse—"the horrors of slavery."

What is true of Charlottesville is doubtless true of every town, village, and hiring station of Virginia. And it is felt everywhere to be a serious evil.

We are no alarmists. We have slept with our doors wide open when insurrection was talked about, and never expect to close them from that cause. We have no dread of any such consequences, and no anticipation of anything else than such occasional and solitary acts of violence, rendered somewhat more frequent perhaps by this cause, as have always occurred in every society, only more rarely in the slave States than in others. All our fears in this regard are for the negro. We do

not anticipate abolition either from the insurrection of the negro or the freak of the fanatic. When it does come, it will be brought about by the worthlessness of the negro. He will be liberated because bondage don't pay. And we do not wish to see him liberated *before the appointed time;* because we prefer the state of society which is built upon a slavery basis, as on the whole superior to any other as at present organized. We do not wish to see his value impaired, his happiness diminished, his civilization retarded; nor do we wish to see the industry of the country crippled, its products diminished, its development checked, and the migration of the negro accelerated beyond the natural and safe current of events. Yet all these must result, if there be not some corrective of the deplorable practices of those who own and are responsible for the slave.

Whence proceeds this thing? Not from fear in any case, unless it be, in a very few cases, fear that the slave may abscond, but from an indisposition to use the necessary energy, from a conviction that the negro will bring his value from somebody and give no *trouble* in the getting it—from that sort of weakness which is called good heartedness, the dislike to hurt the negro's feelings, by curbing him and making him feel the difference between master and slave, and from the fear of being thought *"a bad master."* And the hirer, who must have the labor, is compelled to succumb, or lose his money. This is the whole secret. Now it is foolish—"we beg everybody's pardon," as Mr. Webster said—but it is foolish, thus to sacrifice so many interests to the weakness of the master and the caprice of the slave.

We do not mean, in remedy of this evil, to indicate a harsh discipline as needful to preserve order among slaves. On the contrary, we believe it injurious to their character and to their masters' interests, as it is repugnant to the feelings of every refined nature. But we do maintain, what all experienced men must concede, that certain restrictions are necessary, and that punishment, moderate but *certain*, if deserved, must be used to enforce them. The sensibility which pleads for large liberty for negroes, as for children, is a morbid one. The negro is, in some respects, a child—all his life a child; he cannot be fully operated upon through the moral sense; and always, at present, more degraded in freedom than in bondage, humanity, even more than policy, requires that he shall not have too much discretion. Nothing is more true than that where it is the *duty* of one set of men to command, and of another to obey, that implicit obedience is absolutely necessary. There is no safety to any party but in full obedience to wholesome laws founded on the necessity of the case and an enlightened moral sense. In this case the necessity cannot be set aside—it is absolute; and religion, humanity, justice and common sense call upon us to stand up to our responsibilities under it. As the parent is wrong who permits his child to choose his teacher, so in kind, but worse in degree, is the master who permits his slave a license which all the promptings of his nature lead him to abuse.

We say, then, let masters assume a manful responsibility—let them do their duty with firmness; let them choose a good home for their slaves, where they will be well worked, well clad, well fed, well watched, and well whipped if they deserve it, and let them compel the slave to accept this provision; let the refractory be dealt with in a summary manner. When this cannot be done, it is far better for the slave that he should be sold to those who have too much regard for him and themselves to permit him to try and take care of himself. And we say to those who hire, combine and refuse to take a slave except from his master or his master's agent. Better do as we have done, offer a bounty of five dollars a head to those who will not consult their slaves. There is not a farmer or a housekeeper or manufacturer or tradesman or mechanic in town, who would not find it to his interest to do so. Concert to that effect, especially in cities, can easily be arranged when men set to work about it. And we hope, though we feel it to be against hope, that they will do so and remedy this great and growing evil. Had we not deemed it such, we had not written these remarks. We have been advised not to do so. "We will shock people," say some kind friends; we will "injure the Planter." To this, after weighing it carefully, and in the spirit which dictated the admonition, we have only to say that the thing *is* an evil, existing among us, not to be concealed from ourselves,

or not worth concealing from anybody else. It requires a remedy, and some one to propose it; and if we are to suffer because we have ventured to prescribe for what comes strictly within our province, be it so. Whatever others may do, we will do our duty.

"THE SOIL OF THE SOUTH" AND "THE TROPICAL FARMER."

We have been requested to call the attention of our readers to these two papers, and we do so with pleasure.

The Soil of the South is an agricultural newspaper, printed at Columbus, Georgia, and well edited by Chambers and Peabody. The latter gentleman, who seems to be the main editor, is somewhat distinguished as a horticulturist, particularly for his mode of raising strawberries, which he produces for a good many months of the year, and of fine quality. His method has been published, and we shall give it to our readers at the proper time.

The paper is as well conducted as any of its price at the North, and we would advise our friends who take Northern journals to add this to the list, or if not, to exchange one of them for this. We go for the encouragement of Southern productions of all sorts, and to the exclusion of Northern productions, if necessary, when the Southern have equal merit. But we do not think it necessary to discontinue Northern journals in order to take Southern, though the latter are much better adapted to our circumstances.

Southern papers have themselves somewhat to blame for the neglect they have encountered; in too many cases they copy from the North instead of bringing out the talent and experience of their own farmers. For instance, one of their standards is Professor Mapes, for whose editorial lucubrations, so far as practical value is concerned, though they are undoubtedly clever, we would not give a button.

We claim to have set them an example in this respect. When we hear of a good thing that has been done by a farmer, we write to him at once to make it public; and our columns show that a number of them have responded to such an appeal to their patriotism, their courtesy and their pride. Others may do so as easily as we have done; and we have no doubt that the usefulness and reputation of their papers will be much increased by doing it.

Whatever may be the comparative *average* of agricultural excellence, there is no question with us that the *good* farmers and planters at the South are superior to those at the North, and their contributions will of course be more instructive and valuable.

The Tropical Farmer is an agricultural journal, of sixteen quarto pages, which has been recently started by Maj. Lewis C. Gaines, at Oceola, East Florida. We wish him all success, and can say that we have been interested in the perusal of his paper. As a record of tropical agriculture, it will possess a value and interest that no other region can supply.

By the way, it is a shame that the Farmer and Planter of Pendleton, South Carolina, is so inadequately supported that the editor thinks he shall have to merge it in a political paper. How can Southern Rights men permit such a reflection on their patriotism, spirit and intelligence! How many gentlemen waste money enough at Newport and other Northern sink-pockets to sustain a first rate agricultural journal at home! Let them travel if they will; and to the North as soon as elsewhere. It will improve them, and will give them, we hope, fraternal feelings towards people who are citizens of this great Republic and therein our equals. But let them learn, as they may by keeping their eyes open whilst abroad, that their first duty is to domestic interests; and that the retrenchment of expenditure in a very few luxurious indulgences will give a fund for munificent contribution to languishing enterprises at home.

STATE AGRICULTURAL SOCIETY.

The meeting of the State Agricultural Society takes place in Richmond on the 16th instant. We hope that not only the present members, who are very few, but a large gathering of those who mean to become members, will assemble to help the good cause. We believe there is not a single State of the rank of Virginia, or anything like it, that has not had its agricultural fair this fall. Our exchanges are filled with their proceedings; and we feel some shame at not being able to

chronicle anything of the sort for Virginia. The Presidential election is now over, and we trust that some attention will be paid to matters at home. Virginia says she made the nomination at Baltimore, and that made the President. Let her now make an agricultural society—she will find it a less difficult task, and one that will redound fully as much to her advantage, if it is conducted as it should be.

RUFFIN'S ESSAY ON CALCAREOUS MANURES.

We have received from J. W. Randolph, the publisher, and proprietor of the copy right, the preface and contents of the new edition of this celebrated work. We are happy to learn that the whole of it will be out by the 15th instant. We commend it in advance to every farmer of the State. To the tide-water farmer it is a necessary of agricultural life.

OSAGE ORANGE HEDGE.

The following account of the hedge of Prof. Turner, of Jacksonville, Illinois, is taken from the Valley Farmer. We commend the facts to those who want hedges, merely stating that it would be unreasonable to expect such rapid growth in a soil as inferior as ours is to the rich lands of Illinois. But we know that they will grow and thrive here, having had ample opportunity of ascertaining that fact by personal inspection, not of a hedge, but of a row of osage orange that had been intended for a hedge in the vicinity of Petersburg.

Whilst we are wating to see if the hedge *will* grow, the Yankee encloses his whole farm with one.

Plants may be had of General William H. Richardson, near Richmond, at a reasonable price.

"We will speak now of the hedges. Mr. Turner's home lot of fifteen acres, is enclosed on all sides with an osage orange hedge, some of it four years old and all of it three. The fence outside of it has not been removed yet, though there is no necessity of its remaining any longer, for we do not think any thing could pass the hedge. We examined carefully to find a place where a chicken or a rabbit could crowd through, but could find none, and as for any animal forcing his way through, or jumping over it, we do not think any 'critter' would try it more than once. We would remark here that during our absence, we rode to and examined a hedge in Green county, Illinois, made of plants set out two years ago last spring. It was along the highway, and the fence had been taken from it. It had proved perfectly adequate to turn all kinds of stock, though not as thick at the bottom as we should have preferred it. It is all important in the growing of hedges that the plants should be cut back several times so as to procure a close growth at the bottom, for if this is not attained at first, there is no remedy for it afterwards, only to cut it all down and let it start up new from the stumps. We saw enough to convince us that this plant, properly cultivated, will make a hedge adequate to turn all kinds of stock, and that it may be kept in order with no extraordinary amount of labor.

"Mr. Turner has several hundred thousand of thrifty plants in his nursery designed for setting out next spring, and his arrangements for preserving and putting up are of the very best kind."

FRENCH MERINO SHEEP.

It has always been considered a most desirable thing to obtain a flock of sheep which, with the finest quality of wool, would give also the heaviest carcass. For a long time, and after repeated trials, it was deemed unattainable, and the fine woolled sheep were not thought suitable for the shambles; but perseverance, which conquers all things, has at last brought it about so nearly—to within "a shade"—that future breeders may safely calculate to reach the goal. The sheep which now present this rare combination are the French Merinos.

We had seen in our various agricultural exchanges such extraordinary accounts of these animals as to try our faith; so we wrote some time ago to the Hon. William C. Rives, our Minister at Paris, to ask an authentic account of them. He has done us the favor to furnish one, as will be seen by the following letters, and has, as his own letter will show, taken the trouble to verify the account by a personal inspection of the two most noted flocks in France. Mr. Rives will hardly claim our thanks for this act of kindness, though he has them. To a farmer so zealous, enthusiastic and public spirited as himself, it was a labor of love. As far as politics have permitted him, he has always been diligent in agri-

cultural pursuits, and had he devoted his energies and rare labor to them he would have been even more distinguished in that line than in the one he has chosen, because, we think, it would have been more congenial to his tastes. When at home, we know that he always takes a leading interest in the business of his farm, and when abroad he does not forget it; as witness his recent importation of a fine young stallion of the celebrated Cleaveland—English coach horse—breed, and his constant purchase at high figures of what are supposed to be the best breeds of stock and mutton sheep that this country affords. That he has not succeeded in improving his stock to the extent of his aspirations and efforts is the fault of his other avocations. To do so through the agency of others is impossible.

One thing in the stock line remains for him to do. Let him bring home with him a mare and stallion of the Norman breed. It is a strain we have never had in Virginia, and we incline to think them the best roadsters in the world, and capital for all other sorts of work.

But *revenons à nos moutons*. We invoke the attention of all enterprising farmers who have the capital to spare to this breed of sheep. It is now an established fact that Virginia, as a wool growing region, excels the North, at one time considered the home of the fine wools. The flocks of those Northern gentlemen who have brought them hither prove it. A gold medal was lately awarded to Mr. Dox, at the Fair of the New York Institute, for the best specimen of fine wool; and his is the most recent flock.

It is time that Virginians should begin the work, and not leave the glory of its consummation to those who may justly claim the honor of its commencement. But how shall it be done? Read the letters below and see how it has *been* done, and then improve upon the copy. Get a few Merino or Saxon ewes, and let two or three—where it is beyond the means of one—club in and buy a buck at successive intervals of two years, until a stock is obtained which shall rival that of any other country.

One thing only have Messrs. Cugnot and Victor Gilbert omitted, that is material. We have seen it in another letter of one or the other of them. Their rams are kept from service until fully matured, and their ewes are not permitted to breed until they are three years old. This is a great point; and no loss attends its observance. The quality and quantity of both wool and mutton fully repays it. One other thing also, which some may deem of moment. The Merino mutton is said to have a strong flavor; theirs is said to be free of it.

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PARIS, October 20, 1852.

My Dear Sir,—I have now the pleasure to send you letters addressed to me by the two most distinguished breeders of French Merino sheep, which I have carefully translated and which I hope you will find to contain, in a condensed and satisfactory shape, the information you desired for the columns of the Southern Planter. I have visited both of these gentlemen at their farms, and spent a day with each of them in looking at their fine flocks and making myself acquainted with their system of management. It was quite refreshing to me to steal away from duties of a very different character here, and to resume, though for a brief season, my favorite pursuits under the guidance of brother farmers, whose cordial hospitality, as well as practical intelligence in our common calling, made me forget for the time that I was in a foreign land.

I also visited, in company with one of these gentlemen, the national flock at Rambouillet, which is the parent stock from which their own, as well as the other private flocks of Merinos in France, derive their origin. Whether it be owing to the system of breeding *in and in* which has been practised there, or to whatever other cause, I found the sheep at Rambouillet of decidedly inferior size to those of Messrs. Gilbert & Cugnot, though stinted in nothing necessary to their fullest condition. The males seemed to me inferior also in their conformation. The females, however, while smaller, appeared to be well proportioned, and even handsomely and symmetrically made, which is not always the characteristic of the Merino race. According to the information I received, the product of wool at Rambouillet is less than that on the farms of Messieurs Gilbert & Cugnot by two or three pounds to the fleece (unwashed.) This defect of quantity is probably counterbalanced by some shade of superiority in quality. It must be borne in mind in estimating the yield of wool by the Merinos that, owing to their extraordinary oily secretions, the weight of the fleece as it is generally given, (in the grease and dirt,) is reduced one-half by the process of washing, even on the back of the animal, and nearly two-thirds after undergoing the farther washing to which it is subjected in the hands of the manufacturer to prepare it for his uses.

The question of what kind of sheep is most profitable to the agriculturist in any given situation is one which is exceedingly complex, depending upon considerations of locality,

soil, convenience to market, and relative demand for wool or mutton, with other circumstances not easy to define. In some situations it will be the interest of the farmer, undoubtedly, to give his attention exclusively or mainly to the fine-wooled sheep. In others, the long or middle-wooled breeds, combining the qualities of better mutton with an abundant, though coarser fleece, will prove more profitable. It is fortunate for us in the United States that the great extent and diversified character of our country will probably make it the interest of different portions to devote themselves to different branches of this growing husbandry, and thus prevent either from being overrun by excessive competition, while a large career will be opened to both. Which of them will best suit our circumstances in Virginia, considered in a general point of view, is a question to which my attention is now earnestly directed, and I hope to be able, during the short remnant of my sojourn on this side of the Atlantic, to collect farther data, from the experience of England as well as this country, that may assist us in coming to a wise conclusion on the subject.

In the hope of renewing our communications face to face on this and kindred topics, before many more months have passed, I remain, my dear sir, very truly and cordially yours,

W. C. RIVES.

P. S.—The letter of Monsieur Gilbert contains, in part and with some modifications, what appeared in a notice of his flock published, a few months ago, in the "Middlebury Register," Vermont; but it supplies, in addition, some very important and interesting matter, particularly in the statement he gives of the *average product of wool of his whole flock*, instead of giving only the extraordinary yield of the best animals, and also in a more detailed account of the composition, management and disposal of his flock, with details entirely new and of much interest with regard to the culture, administration and general economy of the farm at Wideville.

W. C. R.

To F. G. Ruffin, Esq. Editor So. Planter.

[TRANSLATION.]

WIDEVILLE, Oct. 14, 1852.

To MR. RIVES,
Minister of the United States at Paris:

The Merino sheep were imported from Spain into France in 1786. The Queen of Spain made a present to the King of France of a flock consisting of both ewes and rams. One-half of this flock was sent to Rambouillet, where it still exists, and the other half was placed at Croissy, near Paris, under the charge of Monsieur Chanorie, where they remained until 1819, at which period they were sold. The rams which came from Spain weighed at three years old 65 kilogrammes,* and yielded six kilos. of wool in the grease, and the ewes weighed 40 kilos. and gave 4½ kilos. of wool. Ten years after their arrival in France, by means of the good care given to them and the judicious selection of rams to unite with the best ewes, there was obtained from them some rams which at three years old weighed 90 kilos. and gave 8 kilos. of wool, and some ewes which weighed 60 kilos. and gave 6 kilos. of wool of as good quality.

This progress was due to the attention bestowed on them in France, both with regard to nourishment and the careful selection of animals for reproduction, while in Spain the flocks were mixed confusedly together, the good uniting with the bad indiscriminately. It was only in 1800 that they commenced making any considerable sales of the increase of the flocks at Rambouillet and Croissy. My father, born of a family of cultivators, was occupied from his youth with the raising of sheep. As soon as he was apprised of the arrival of the Spanish flocks in France, he went every year to visit them; and he became satisfied by repeated observations that our climate would agree well with them, and that they offered a great advantage over our French races by their product of wool and were equally advantageous for mution. In 1800 he bought at Croissy a ram and eight ewes, continuing every year thereafter to buy from two to four ewes down to 1810. In 1811 he bought fifty ewes and five ram lambs, and in 1819, when the whole flock at Croissy was finally sold, he bought fifty-four more ewes out of the flock. These animals cost him from 120 to 300 francs the head.

The pasture at Croissy being much better than that of Rambouillet, the animals there were finer, and this was the reason that my father preferred making his purchases there. In 1821 he bought a ram at Rambouillet. Although these two flocks were of the same family, he obtained a great advantage by allying the blood of the Rambouillet flock to that of his own proceeding from the Croissy flock, inasmuch as there had been a complete separation between them since 1786. This experiment demonstrated that the same race may be improved by renewals from its own blood, when there has been a separation for some years. The change of pasturage and the different system of management which each proprietor follows, produce modifications that render a subsequent union between the branches advantageous.

This practice has been accordingly pursued by us. From 1821 to 1827, my father bought five rams at Rambouillet. At the latter period he transferred his flock to me, which then consisted of 209 ewes from three to six years old,

* The kilogramme (that is a thousand grammes) is the precise equivalent of two French pounds. The French pound is about one-tenth more than ours, being equal to 1 lb. 1 oz. 10½ dr. avoirdupois.

of 176 ewes of one to two years old, and of 90 ram lambs of six months old. In 1832 I bought fifty-five ewes at a sale at Rambouillet. Since then, I have bought several ewes and two rams of that flock to renew, from time to time, the blood of my own, choosing for *reproducteurs* the animals the best formed, and carrying the greatest quantity and finest quality of wool. By this means, I have raised rams weighing, at three years old, 125 kilos. and yielding as much as 12 kilos. of wool, and ewes weighing 100 kilos. and giving 9 kilos. of wool.

The good system of management established by my father is my guide. In following his principles, my flock has acquired a high character in France and abroad. Since 1820, we have sold yearly from 80 to 100 rams and as many ewes to the various parts of France, where the raising of Merino sheep is pursued. It was on the 11th of May, 1846, that I had the pleasure of a visit from Mr. Taintor of the United States, to whom I sold two rams and seven ewes. Since that period, I have made yearly shipments to him of ewes and rams, and they have succeeded admirably with him, and he has made my flock known in America as it is in France. For three years past I have sold rams and ewes to Mr. Francis Rotch of Otsego, State of New York, to Mr. Isaac de Forest of the same State, to Mr. Sandford of Vermont, and to Mr. Jewett of Middlebury, Vermont. I have sold, to be delivered in 1853, twelve ewes and two rams to Mr. Leon Narischirine of Saint Petersburg in Russia.

My flock now consists of 280 breeding ewes of from eighteen months to six years old, and of 260 lambs nine months old, half male and half female. Each animal (meaning the average of the flock) has given me 6 kilos. 50 grammes of wool in the grease, which I have sold at 2 francs 40 centimes the kilo. The sale of the surplus of my flock each year is from 240 to 250 ewes and rams. The high reputation it has acquired in France and foreign countries gives me great facilities in making sale of them. The price of the ewes varies from 200 to 600 francs, and that of the rams from 300 to 1000 francs, according to quality. There are rams of the reserved portion of the flock which go as high as 2000 francs.

According to the experiments made by my father and which I have continued for the improvement of the race of Merinos, we have acquired the certain conviction that it is necessary to pasture them on healthy lands, rather dry than moist, not to let them graze in the dew, and to renew their blood every five or six years. If these periodical renewals are postponed for a longer time, it will be found difficult to maintain the flock in the same degree of excellence and it will be impossible to improve them. When I put the ewes with the rams, I separate the ewes into as many lots as I have rams, giving to each ram the ewes which best correspond with him both in form and wool, and taking care that the ram possess the particular qualities in which the ewes are deficient. I sometimes take out an individual ewe and put her to a particular ram which will best correct her defects. It is by these means put carefully into practice and renewing the blood of my flock, that it has acquired a superiority over that of Rambouillet, which is maintained entirely by breeding from itself.

I cultivate 275 hectares* of land of a calcareous soil, more dry than moist. I follow mainly the triennial rotation, with the addition of artificial grasses. I cultivate annually 55 hectares in wheat and rye, 65 hectares of oats, 35 hectares of luzerne, mixed with bourgogue and clover, for the winter feed of the sheep, 30 hectares of artificial *prairies* of bourgogue, mixed with wild succory, for green food, and have besides 10 hectares of natural meadow. Of the *fallow* (*jachères*) I cultivate 15 hectares in March peas and lentils for the winter feed of the sheep, 10 hectares in vetches for green food, and 25 hectares lie uncropped. The 35 hectares which remain are waste land in which the plough cannot be introduced on account of the quantity of stone in the soil. All the crops are applied to the nourishment of the animals on the farm, except the wheat and the rye. The flock of sheep consists in the winter of 540, with the 260 lambs that are born, making a total to keep in the winter of 800 sheep, 20 cows and 14 horses. I buy every year to complete the necessary supply of food 1800 hectolitres† of bran.

I have the honor to be, with the highest consideration, your very devoted servant,

VICTOR GILBERT.

[TRANSLATION.]

Donaitière Pres Rambouillet,
October 15th, 1852.

Monsieur,—I have now the honor to address to you the notice you requested from me of the origin and formation of my flock.

My father, who was a notary, desiring that I should follow the same career, caused me to study the law; but my taste for agriculture made me renounce the profession of a notary, and in 1818 I exchanged the pen for the plough. At that epoch the Merinos had multiplied considerably. The first flock, imported into France in 1786, had been placed at the Royal farm of Rambouillet; and even as late as 1800, they were not able to find purchasers for the increase. The French cultivators did not then foresee that this fine race would one day become a source of riches for them.

In order to propagate the race, lambs were given to the farmers in the neighborhood who

* The hectare is about two and half acres of our land measure.

† The hectolitre is near three bushels of our measure.

applied for them. In this way, Monsieur Delamotte, an agricultural proprietor near Rambouillet, formed a small flock for himself. Ceasing to cultivate in 1818, he sold his Merinos and I became the purchaser. I profited of another occasion which presented itself the year following. Monsieur de Saint Didier, proprietor of the fine domain of Vervins, near Rambouillet, and a banker at Paris, had imported from Spain a flock of ewes, which he placed on a farm attached to his chateau. Occupied exclusively with the business of the exchange and commercial speculations, his flock of sheep, as well as the rest of his agricultural concerns, was abandoned entirely to agents, and brought him nothing but losses. He leased his farm and sold his flock. I bought a hundred of them. Those I bought of Monsieur Delamotte were very superior in respect of the wool to the Spanish Merinos of Monsieur Saint Didier. The fleece of the latter was not uniform. On some parts of the body it showed a great deal of fineness, while on others it presented a very coarse staple. This, it appears, is still the case with the Spanish sheep, as but little attention is paid in that country to the improvement of the animal.

For a long time I bought rams at the Rambouillet farm, at from 800 to 1500 francs the head. Since, I have gotten them from my friend Gilbert whose flock, founded by his father, goes back to a more ancient origin than mine. We now mutually exchange our rams, and thus maintain the purity of blood, which we should run a risk of losing by getting from others. Though the two flocks may thus be said to form but one and the same family, we yet obtain by this exchange, (and the more so on account of the difference of pasture on our farms,) a species of *cross* which renews the blood, and avoids the disadvantages of the system of breeding *in and in* practised at the Rambouillet farm.

By a continual selection of the best rams and selling off each year the ewes which have the least good qualities, and taking care especially to assign to each of those that are retained the ram best suited to correct any deficiencies which may be remarked in them, either in respect of form or fleece, I have succeeded in raising rams which weigh as much as 125 kilogrammes at two years old and give a fleece of 13 kilogrammes.*

It is this degree of success which has obtained for my flock the reputation it now has, and which induces flock-masters, and particularly breeders of rams to come and buy tups of me at the highest prices which have been known down to the present day. I have sent lately to America a ram of 30 months old, (No. 13,) for which I refused in France 2400 francs, and I have one of 18 months old for which a French cultivator offers me 3000 francs after serving my ewes the next season.

Our sales to America go back to the 10th May, 1846. It was Mr. Taintor of Connecticut, to whom we made our first sales, and who introduced my flock and that of Mr. Gilbert to the knowledge of American farmers. We have since had the visits of several American breeders to whom we have sold both ewes and rams; but it is Mr. Jewett of Vermont, to whom we have sent the greatest number.

If you should desire any farther details it will give me great pleasure to communicate them to you.

I have the honor to be your respectful servant,

CUGNOT.

Mr. Rives, Minister of the United States.

* The kilogramme is the equivalent of two French pounds, and the French pound is about one-tenth more than ours.

THE CLOSE OF THE VOLUME.

With this number Volume XII. closes—and we would take occasion to remind many of our subscribers who are in arrears, that another year's subscription has been added to their indebtedness. From all such we would be glad to hear as soon as convenient. Some, no doubt, (very few we hope) will wish to discontinue—such will confer a favor by immediately informing us, stating the post office to which their papers have been sent.

With the new volume will be a good time for new subscribers to begin. Will not our friends exert themselves a little to give us a long list to commence the new year with? We give them a paper worth more than a dollar to any man, and we feel that in asking them to aid us, we ask them to aid a cause in which they are interested in common with us.

For the Southern Planter.

SHEEP,

THEIR PROFITS—AND THE IMPROVEMENT OF LAND BY THEM.

Mr. Editor,—Allow me to congratulate myself, and your readers generally, upon the appearance of a correspondent from the "Valley of Virginia." If success be a criterion of knowledge and judgment, he is the one from whom we can all derive much information. Let us hear from him often.

With these sentiments, it may appear inconsiderate to dissent from any of the positions taken by him; but, where they seem to be paradoxical, or even to transcend ordinary experience, it may be well to question them a little.

Not that I would enter into a discussion as to the comparative merits of large and small sheep: their profits, and the improvement of land by them, will be treated of here; and the somewhat equality between different improved breeds will be maintained.

1st. *Their Profits.*—In January, 1850, I purchased twenty ewes in lamb, cost $80, of tolerably high grade Bakewell's. They were driven twelve or fifteen miles through snow and muddy roads; and, in consequence, probably several died, which, with what were stolen, reduced them to fourteen within a twelve-month. The next fall, a buck lamb was presented to me, a cross between Cotswold and Bakewell; this, too, died the following summer, probably from excessive fatness. In addition to these losses, several of the flock have been stolen from time to time. The sales have been as follows, viz:

1850,	89 lbs. wool,	at	21 cents,	18.70
1851,	152 " "	"	22 "	33.44
1852,	207½ " "	"	20 "	41.55
"	14 lambs,*	"	$2 00	28,00
"	40 muttons,	"	4 00	160.00
				281.69
First cost,	- - - -			80.00
				201.69

Estimating, now, the interest and salt as equalized by the mutton and lamb consumed on the farm, we have a clear profit of $200, upon twenty ewes in two years and a half, as an ordinary transaction, and that, too, under unfavorable circumstances. The grass consumed was not missed, and the little winter provender used, was quite repaid by the manure. What other operation on the farm has been so profitable? None, it is believed. And how much more profitable would it have been with the sheep and wool and prices of the "Valley of Virginia!" As he truly intimates, grazing cattle would be a small business in comparison! But could we expect his prices to continue long, and especially after such sheep shall have become more diffused?—Here are a few facts to answer in part. I know two very fine flocks, about 150 each, of high grade Cotswold. They averaged this spring about 7½ pounds of wool in the dirt, which was sold to the manufacturer for 20 cents, who did not fancy it most, or very much, for making negro clothing, his cards not being adapted to it, nor it for that kind of clothing. It is best for mouslin de lane, and our negroes do not use that any more than broadcloth as ordinary wear. Nor can the mutton be sold readily, if at all, at $6. Could that be obtained, or still better, $8, and the wool be sold at 25 cents, it is believed these large sheep would soon supersede all others hereabouts, in spite of some drawbacks. The object of the writer is not to disparage large sheep—as witness, the statement above about his own—it is to attract the attention of farmers to a source of wealth at present disregarded by them. And the statements of the Valley writer only sets that forth in a stronger light. But as disappointment depresses our exertions, our expectations ought not to be inordinately excited; and the ordinary profits of sheep husbandry are sufficient to insure its prosecution if once undertaken in Virginia anywhere west of tidewater.

2d. *Their Improvement of Land.*—What has transformed Norfolk county, England, from one of the poorest to one of the most productive in the kingdom? Sheep and turnip husbandry. Cattle might have been used (and have been measurably,) to convert the raw material into manure, if they could have been substituted, but the fact that sheep have been chiefly used, shows that they are not deleterious to the soil. Again, could any one have seen the corn last year, and the wheat this year, (both years excessively dry in the growing season,) on an exhausted farm near me—produced by sheep having been grazed upon it for three or four years, he would hesitate no longer as to their power of improving land. Nor could cattle, or even large sheep, have produced the same effect, principally from the scarcity of grass, and also, from the character of the droppings; i. e. if large sheep's are so similar to cattle's. And here I would adduce the opinions of one of Fauquier's most judicious sons, as confirmatory of my own. That county has been most materially improved in wealth and fertility of soil, by a system of grazing pursued for fifteen or twenty years. That gentleman thought sheep manure far better than that of cattle, from the fact of its being in the shape of those despised little pellets; believing that on bare ground they were less impoverished by evaporation and washing, than the large and incoherent mass of cow dung; and that in grass, they soon became enveloped and overshadowed, and even incorporated with the soil; whereas, even in grass, the other manure, from lying on top of it, suffered the same diminution of value as in the first case, and became a comparatively inert, pulverulent mass. The "Valley" will thus see that all do not admit that pultaceous manure is infinitely richer than indissolvable little balls; and this brings me to questioning his positions again. Let us admit that Cotswolds will fatten more rapidly than Merinos, it will result that a piece of good grass that will fatten ten of them, will do it more rapidly than it will ten or even one of the Merinos. But suppose a piece of good grass will only fatten ten Merinos, will it fatten ten of the others at all, or would they exhaust it and starve? Your correspondent thinks not.—Well, if they eat less, (which is by no means allowed,) and retain more for fat and flesh and wool, how can they void more and richer manure? It is granted that manure from fat animals is better than that from lean ones; but

*Most of these by a Merino buck last fall.

that arises from the better food as to quantity and quality consumed by them. When the food, however, is the same, and the animals are in good condition, unless the one retains more of the strength of it than the other, the manure will be equally good, when dropped. And it is not granted that Merinos will not acquire and continue in as good condition as the large sheep on good pasturage, or even better on indifferent pastures, nor that they will not improve land in an equal or superior degree. A few facts may be here introduced. The writer of this having resolved for various reasons to replace his large sheep by Merinos, had a number of each in the same pasture during the winter, and up to this time. They fared alike in all respects; but the large sheep consisted of a selection (with their descendants,) from the top of a good flock; and the Merinos were the cullings (with one good buck,) of only 20 ewes, out of a flock of some 200 or 300. At shearing time, they were in about equal condition—most of them very fat—and I would hesitate to decide which had the advantage. Suffice it to say, some of the Merinos were so fat—with lambs by their side too—as to excite apprehensions that they might die under the shears from what is termed melting of the fat. It may not be amiss to mention, in conclusion, that the fleeces averaged at the mill $1 03 for the large sheep, at 20 cents per pound, (being a fraction over five pounds,) and $1 17 for the small sheep, at 30 cents per pound, (being a fraction under four pounds,) and also that the fleeces of the beforementioned very superior flocks averaged about $1 50.

This subject, Mr. Editor, has been treated of briefly and superficially. My mite, however, has been thrown in to assist in arresting the attention of farmers, and also to maintain the somewhat equality between the different races of good sheep. It depends very much upon localities and circumstances, which should have the preference; some being more profitable than others, under certain conditions, as to markets and the quality of land, and its adaptation to the nutritive grasses, and also as to climate. Perhaps in Piedmont Virginia, the Cotswolds would answer best as mutton sheep, beside their wool, with good grass on rich land; the Southdowns as mutton, beside their wool, on good grass upon thinner land; and the Merinos for wool, mutton and lamb, upon the generality of land, in this section of country.

The preceding was written some months ago, but not forwarded, from circumstances unnecessary to mention. Since then, and at the time of the delivery of the mutton, $5 per head could have been obtained as readily as $4 at the time of sale. This would have been a considerable increase in the per centage of profit.

In attempting to bring land into a high state of improvement by sheep, it is well to know that they have a specific influence upon it. They extract and remove from it, in their wool and otherwise, the phosphate of lime, and in such quantities that their long continued grazing might materially affect the production of grain crops. It would be proper, then, to add guano or bone-dust to the land, as occasion required, which together with their organic manures would keep the soil in a progressive state of improvement. A similar exhaustion of the phosphates is produced by the removal of butter and cheese from a dairy farm; as is shown by experience in the great cheese county of Chester, in England. After producing cheese of the best quality for ages, which could not be imitated or equalled in other counties of unlike soil, even by removing the Chester cows and Chester dairy-maids to them, it commenced failing in the quantity and quality of cheese, and even in the number of cows that could be fed per acre; nor could crops of grain be raised. To remedy the defect, it was only necessary to apply bone-dust, phosphate of lime, and, like magic, its former fertility and productions were restored. In like manner, bone-dust may become necessary upon sheep farms.

"ANON."

November, 1852.

MR. ED. RUFFIN'S COMMUNICATIONS.

We have a few copies of the September, October and November numbers on hand, containing the very able and instructive articles of Mr. EDMUND RUFFIN, communicated to the State Agricultural Society. These articles have been pronounced by some of our most enlightened farmers to be the very ablest and best they have ever seen in an agricultural journal; and we are pleased to state their publication has procured us a number of new subscribers. Others who wish to secure the numbers containing them should send in their names immediately—or they may be too late.

FINE CHEWING TOBACCO.

Messrs. Gilliam & Matthews, enterprising manufacturers of tobacco in this city, have sent us a sample of their "Winesap" brand which, after trial, (and an experience of 30 years in chewing the "weed," we think, entitles us to be a judge,) we pronounce good—*very good*. We have never seen any tobacco more beautifully put together and cased.—These gentlemen put up their tobacco more particularly for the New Orleans trade, but

such as this must find ready sale in any market. They are very liberal in giving the *planters* high prices, having paid $46 for the leaf of the sample sent us, and we take pleasure in recommending them to sellers of the raw material as well as buyers of the manufactured. P. D. B.

PAYMENTS TO THE SOUTHERN PLANTER,

From November 7th to December 1st, 1852.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

Capt. N. Ward to January 1854,	$1 00
Dr. M. H. Harris to July 1853,	1 00
John Smith to July 1853,	1 00
L. H. Minor to September 1853,	1 00
Dr. Thos. J. Wooldridge to Sept. 1853,	1 00
William T. Johnson to January 1853,	4 00
Rev. Wm. Crawford to January 1854,	1 00
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Dr. Joseph S. Dejarnette to Sept. 1853,	1 00
Dr. George Fleming to September 1853,	1 00
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Ed. L. Travis to January 1854,	1 00
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John C. Page to January 1853,	1 00
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Charles Selden to September 1853,	1 00
Dr. W. Nangle to January 1853,	4 00
George G. Lee (6 copies) to Sept. 1853,	5 00
Maj. James Walker to September 1853,	1 00
Samuel B. Findley to July 1853,	1 00
Col. Samuel M'Clung to July 1853,	1 00
Thomas A. Field to January 1854,	2 00
Rev. Willis Huckstep to July 1853,	1 00
David T. Laird to June 1853,	1 00
William Flannagan to September 1853	1 00

EAGLE FOUNDERY.

THE subscriber having removed to the large Foundery, just erected by him and fitted out with machinery of the latest and most approved style, is, in addition to the manufacture of Tobacco Flattening Mills, prepared to receive orders for Stationary Steam Engines, Saw and Grist Mills, Agricultural Machines, Tobacco Presses of every description, and all kinds of Iron and Brass Castings. He pledges himself to execute faithfully, and with dispatch, all work entrusted to him, and respectfully solicits a call from his friends and the public generally.

The highest cash prices paid for old cast iron, brass and copper.

PHILIP RAHM,

je—1y Cary, between Pearl and 15th sts.

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OSAGE ORANGE PLANTS FOR LIVE FENCES,

THE best and most durable enclosure for farms, gardens or lots. I have some of these plants for sale—$1 per hundred—and would be glad if those who want them would inform me as soon as convenient.

de—4t WM. H. RICHANDSON.

ANALYTICAL LABORATORY

FOR THE ANALYSIS OF SOILS, &c.—The undersigned announces, that through the liberality of the Planters of the adjacent counties, there has been established, in connection with the Department of Chemistry in Randolph Macon College, an Analytical Laboratory, for the analysis of soils, marls, plaster, guano, minerals, &c., and for instruction in Analytical Chemistry. The Laboratory will be furnished with the most approved apparatus and choice re-agents, with every desirable facility. He has associated with him Mr. William A. Shepard, who was recently assistant to Professor Norton, in the Yale Analytical Laboratory, and who comes with ample testimonials of skill and capacity. Young men can pursue any studies in the College they may wish, while they are receiving instruction in the Laboratory. Copious written explanations will always accompany the reports of analysis. The charges for analysis and instruction will be moderate—the design being to make the Laboratory accessible to the people at large. Packages left with Messrs. Wills & Lea or Smith & Dunn, Petersburg, Virginia, will be forwarded, free of charge, to those who send them. For further information, address CHAS. B. STUART,

Professor of Experimental Sciences, Randolph Macon College, Va. oc—tf

PRODUCE MARKETS.

Richmond, Nov. 29, 1852.

TOBACCO.—The recent advices from the English and German markets have caused a more active demand for all descriptions of tobacco, especially useful kinds.

The stock of old on sale is very much reduced in Richmond. Sweet sun-cured tobacco is much wanted—none for sale in market. We sold the past week 75 hhds. old lugs at $4 75 and $5. Some fine lugs at $5 50 and $6 25.

WHEAT.—Good samples red and white sell readily at $1 10 and $1 15. We contracted for delivery by first March, several large crops at $1 12½ for red, $1 17½ for white.

SHEAF OATS—$1 25 and $150; clean, 40 and 50 cents. Last sale of old corn, 70 cents; new, 66½ cents, delivered in December. Corn will be in demand.

Accounts from Liverpool to 17th November are received. Wheat and flour in demand. Owing to the advance in freights, grain and flour are dull in New York.

TAZEWELL S. MORTON & Co.
Produce Commission Merchants.

ANALYSIS OF SOILS, &c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,
Prof. Chem. and Agriculture, V. M. I.
Feb. 1, 1852. Lexington, Va

SOUTHERN FRUITS.

HOPEWELL NURSERIES, Fredericksburg, Virginia.—The Proprietor offers for sale a large stock of Fruit and Ornamental Trees, Evergreens, Roses, &c. Having witnessed the evil of circulating numerous Northern Fruits, without proper regard to proving their quality and adaptation to a Southern climate, the proprietor has looked more to the South for his Winter Apples, and has introduced many superior varieties, perfectly adapted to our long hot summers; and keeping late in the Spring.

ALSO a large stock of Pears, Cherries, Peaches, Plums, Apricots, Grapes, Strawberries and other Fruits—a fine stock of Roses and other Flowers. His prices are low. For particulars see Catalogue, which will be sent to all post-paid applicants. Trees packed in the best manner, and shipped according to orders to any part of the United States.

oc—2t* HENRY R. ROBEY.

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